The Croonian Lecture

ON THE

COAGULATION OF THE BLOOD,

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MR. PRESIDENT AND GENTLEMEN,—The subject on which I have the honour to address you this evening is one which lies at the foundation both of Physiology and Pathology, and, on account of its great importance, has engaged the best energies of many very able men, among whom may be mentioned, for example, such distinguished Fellows of this Society as John Hunter and Hewson; so that it might well seem presumptuous in me to hope to communicate anything new regarding it, were it not that the constant progress of Physiology and the allied sciences is ever opening up fresh paths for inquiry, and ever affording fresh facilities for pursuing them. Indeed, my difficulty, on the present occasion, does not depend so much on the lack of materials as on the complicated relations of the subject, which make me almost despair of being able, in the short time that can be devoted to a lecture, to give, in anything like an intelligible form, even an adequate selection of the facts at my disposal.

It may, in the first place, be worth while, more especially for the sake of any present who may not be physiologists, to mention very briefly some well-known general facts respecting the constitution of the blood. The blood, if examined by the microscope within the vessels of a living animal, is seen to consist of a liquid and numerous small particles suspended in it. The liquor is termed the "liquor sanguinis," the particles the "blood-corpuscles." Of these corpuscles a few are colourless, and are named the "colourless" or "white corpuscles." The great majority are coloured and cause the red appearance of blood, and hence are called the "red corpuscles." Soon after blood has been shed from the body, it passes from the fluid into the solid form. This depends upon the development in the blood of a solid material termed "fibrin," so called from its fibrous nature, consisting, as examined by the naked eye, of tenacious fibres, and having the same character also under the microscope. These fibres form a complicated network among the blood-corpuscles, and from their tenacity are the cause of the firmness of the clot. Soon after the process of solidification or coagulation is complete, the fibrin exhibits a disposition to shrink, and squeezes out from among the corpuscles entangled in its meshes a straw-coloured fluid termed the serum, very rich in albumen—in fact, very similar in chemical composition to the fibrin, which, in its turn, may be said to be identical chemically with the material of muscular fibre.

The question before us, therefore, is, What is the cause of the development of this solid material—the fibrin? The subject may be looked at in two aspects: first, as to the essential nature of the process of coagulation; and, secondly, as to the cause of its occurrence when the blood is removed from the body.

With regard to the first point, the essential nature of the process of coagulation, different views have been entertained. John Hunter was of opinion that the coagulation of the blood, the solidification of the fibrin, was an act of life—analogous, in some respects, to the contraction of muscular fibre. This, on the other hand, was made very unlikely by the observation of his contemporary, Mr. Hewson, that blood may be kept in the fluid state by the addition of various neutral salts, but retains the faculty of coagulating when water is added to the mixture. Mr. Gulliver, on one occasion, kept blood fluid, by means of nitre, for upwards of a year, but found that it still coagulated on the addition of water. It seems exceedingly improbable that any part of the human body should retain vital properties after being thus pickled for more than a year. But here I would wish to make an explanation of the use of this term "vital properties." When employing it, I do not wish to commit myself to any particular theory of the nature of life, or even to the belief that the actions of living bodies are not all conducted in obedience to physical and chemical laws. But it appears that every component tissue of the human body has its own life, its own health, just as we ourselves have; and as the actions of living men will ever retain their interest whatever views be entertained of the nature of life, so must the actions of the living tissues ever continue to be essential objects of study to the physiologist and pathologist. When, therefore, I use the term "vital properties," I mean simply properties peculiar to the tissues as components of the healthy living body.

Turning now to the other aspect of the subject of coagulation—the cause of the occurrence of that process on the escape of the blood from the living body—we find that here again various theories have been held, which may be divided into mechanical, chemical, and vital. The mechanical theory was, that mere rest of the blood was sufficient to cause coagulation. I say this *was* the theory; but I believe it will be found to be still taught by many, that the cause of the coagulation of the blood in an artery which has been tied is its stagnation in the vicinity of the ligature.

As to the chemical theories, they have been various. One very natural view was, that exposure to the air was the essential cause of coagulation. Mr. Hewson believed that this was, at all events, an important element in the cause of the phenomenon; and many eminent physiologists and pathologists have held the same view, except that, instead of the air as a whole, the oxygen of the air has been supposed to be the important element.

Sir Charles Scudamore considered that coagulation was greatly promoted by the escape of carbonic acid; and more recently the evolution of ammonia has been regarded as the essential cause of the change. According to the ammonia theory, due to Dr. Richardson of this city, the fluidity of the blood within the body depends on a certain amount of free ammonia holding the fibrin in solution, and the coagulation of the blood when withdrawn from the vessels is the result of the escape of the volatile alkali.

Then, as to vital theories. These have been held by many physiologists, among whom may be mentioned Sir Astley Cooper and Mr. Thackrah, who, from experiments which they performed, were led to the inference that the living vessels exert an active influence upon the blood, by which coagulation is prevented; and Mr. Thackrah went so far as to attribute this action of the vessels to nervous influence. The view that the blood is kept fluid by the operation of its natural receptacles has been advocated more recently by Brücke of Vienna, whose essay will be found in the *British and Foreign Medical Review* for 1857. Brücke performed his experiments on turtles and frogs, in which animals the blood remains fluid in the heart for days after death; and I feel bound to say that some of the facts which he has brought forward seem to me quite sufficient to show that the ammonia theory, whatever amount of truth it may contain, cannot be the whole truth, and cannot explain the fluidity of the blood within the body. For example, Brücke found that, having shed blood from the heart of a living turtle into a basin, and transferred, with a syringe, a portion of that blood into the empty heart of another turtle just killed, the blood thus transferred into the empty heart remained fluid for hours; whereas that which was left in the basin coagulated in a few minutes. He also found that blood continued fluid in the heart of a turtle long after the injection of air into the heart through a vein, till the cavities of the organ contained a foamy mixture of blood and air.

Yet it by no means follows that the vital theory and the ammonia theory are necessarily altogether inconsistent. It might be true for anything we could tell, *à priori*, that the coagulation of the blood, when shed from the body, might depend on the evolution of a certain amount of ammonia, previously holding the fibrin in solution, and yet it might, at the same time, be true that the cause of the ammonia remaining in the blood in the healthy vessels might be an action of the living vessels retaining it there. It might be that an action of the living vessels might chain down the ammonia and prevent it from escaping, whereas, when shed from the body, it would be free to escape.

This notion was, I confess, at one time entertained by myself; and one of my earliest experiments was performed with a view to the corroboration of the ammonia theory as applied to blood outside the body. It seemed to me desirable that further

evidence should be afforded of the effect of mere occlusion from air in maintaining the blood fluid. If the ammonia theory were true, then if blood could be shed directly from a living vessel into an air-tight receptacle composed of ordinary matter it ought

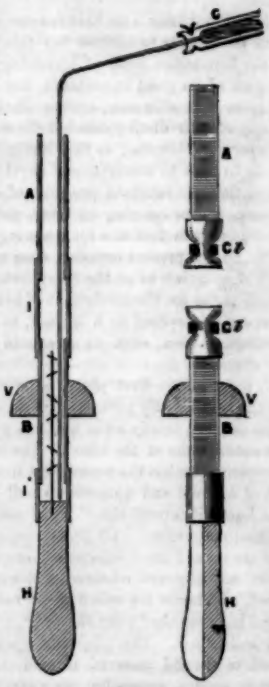
FIG. 1.

to remain fluid. For this purpose I made the following experiment:—I tied into the jugular vein (V, Fig. 1) of a sheep a long vulcanized india-rubber tube (T), adapted by means of short pieces of glass tube at its extremities, both ends being connected with the vessel so that the current of blood might be permitted to flow through the tube, and then continue its natural course. When it had been ascertained that the blood was circulating freely through the tube—which could be readily done by placing the finger on the cardiac aspect of the vein, which was then made to swell if the circulation was proceeding through the tube—pieces of string well waxed were tied at intervals of about two inches round the tube, which was thus converted into a number of air-tight receptacles containing blood, which certainly had no opportunity for the escape of ammonia. The tube was then removed, and I found, in accordance with the view which I was then disposed to entertain, that the blood, instead of coagulating completely in a few minutes as it would have done if shed into a cup, remained partially fluid in these receptacles after the lapse of three hours. But I have since found that if the experiment be repeated in the same way as regards its earlier stages, and if, after a few of the strings have been tied on, the tube be cut across, the blood which is in the part of the tube in the vicinity of the air, just like that which is in the air-tight receptacles, remains fluid in part for two or three hours: in short, that my precautions in ensuring that these receptacles should be air-tight were, in so far as they applied to that object, utterly unnecessary. I mention this partly as an illustration of the deceptions to which one is liable in this inquiry, and partly because the experiment thus modified seems to tell as clearly against the ammonia theory as the original one seemed to tell in favour of it. Those receptacles which had been formed by the application of ligatures before the tube was opened afforded certainly no opportunity for the escape of ammonia, and yet in them the blood coagulated as quickly as in those which had communication with the air—implying that facility for the evolution of ammonia does not in itself affect the process of coagulation at all.

How then, it may be asked, is the persistent fluidity of the blood under these circumstances to be explained? That will become more obvious in the sequel than I can make it at present; but in the mean time I may observe that there are probably two explanations: one is, the coolness of the tube; and the other (far more important), that the blood, in slipping through this cylindrical tube, had had little opportunity of being influenced by its walls. The portion of the blood that first came in contact with the walls of the tube had coagulated. And it is to be observed that in these experiments I never found the blood altogether fluid, even after a comparatively short time: there has always been a certain amount of coagulation, and only a certain amount of fluidity. A layer of blood having thus coagulated upon the internal surface of the tube, the fresh blood which continued to flow through it was not brought into contact with the walls of the tube at all, but with their lining of coagulated blood.

It has been long known that if the blood is stirred with a rod, the process of coagulation is promoted. It seemed desirable to ascertain distinctly whether the cause of this was the contact of the foreign solid, or the opportunity given for the escape of ammonia; for it is quite true that in the ordinary process of stirring blood, more or less air is mixed with it. For the purpose of determining this I devised a somewhat complicated experiment, which, however, it may be worth while to mention. I made an apparatus (Fig. 2) of two portions of glass tube (A and B), connected in a vertical position by means of vulcanized india-rubber (I), the lower portion of the glass tube being also connected by india-rubber (I′) with a wooden handle, which handle (H) was provided with an upright piece of wire, from which spokes projected in different directions, so that they would, when moved, act as a churn on any blood contained in the lower portion of tube. When the lower piece of tube was fixed by means of a vice (V), the flexibility of the india-rubber permitted the churn to be rotated so as to expose the blood to its influence. This having been arranged, I first poured in strong liquor ammoniæ, so as to get rid of any slight acidity which the constituents of the apparatus might be conceived to possess; and then, having poured out the ammonia, filled up the apparatus with water, and boiled the whole in a large glass test-tube till all bubbles of air in any portion of it were expelled. Having then tied into a branch of the carotid artery (C) of a calf a bent tube of small diameter, as represented, and having permitted the blood to flow till

FIG. 2.



it escaped at the orifice of the tube, I compressed the artery and passed the tube down through the water to the bottom of the apparatus, and then let the blood flow again, which had the effect of displacing all the water; and when the blood appeared at the top of the apparatus the tube was withdrawn, when two effectual clamps (C′, C′) were placed on the vulcanized india-rubber connecting A and B; the india-rubber was then divided between the clamps, and we had the state of things represented at the right-hand side of the diagram. The upper portion of the apparatus, the orifice of which was exposed to the air, was set aside and left undisturbed. Having ascertained that the lower portion had been effectually sealed by the clamp, and thus prevented from any opportunity of escape of ammonia, I subjected it to the action of the churn for a certain number of minutes. It so happened that the blood of that calf was very slow in coagulating. I knew this from previous experiments on the animal, and therefore continued the action of the churn for a considerable time—namely, thirty-seven minutes. I then found the wire enveloped in a mass of clot; and examination of the fluid residue with a needle indicated that the fibrin had been all withdrawn from the blood on which the churn had acted. I did not now examine the other portion of the apparatus which had been set aside; but at the end of an hour and a quarter, when more than double the time had elapsed, I investigated this, and found the blood in it for the most part still fluid and coagulable. Thus the blood in the churn, which from the time it left the artery had no opportunity of parting with its ammonia, coagulated much more rapidly than that in an open vessel. The difference between the two was that the lower portion of the blood had been freely exposed to the influence of the foreign solid, whereas the other had only been subjected to the action of the wall of the tube.

The same principle may be illustrated by an exceedingly simple experiment which I performed only this very day. Receiving blood from the throat of a bullock into two similar wide-mouthed bottles, I immediately stirred one of them with a clean ivory rod for ten seconds very gently, so as to avoid the introduction of any air, and then left both undisturbed. At the end of a certain number of minutes, I found that, while the blood which had not been disturbed could be poured out as a fluid, with the exception of a thin layer of clot on the surface and an incrustation on the interior of the vessel, the blood in the other vessel, which had been stirred for so brief a period, was already a solid mass.

I have only lately been aware of the great influence exerted upon the blood by exposure for a very short time to a foreign solid, and I feel that many of my own experiments, and many performed by others, have been vitiated for want of this knowledge. Take, for example, the effect of a vacuum, which was observed by Sir Charles Scudamore to promote coagulation. This has been considered by Dr. Richardson as an illustration of his theory, the vacuum being supposed to act by favouring the escape of ammonia. I have lately inquired into this subject, and I feel no doubt whatever that the greater rapidity of coagulation in a vacuum depends simply on the greater disturbance of the fluid. I made the following experiment:—I filled three bottles such as these from the throat of a bullock, placed one of them under the small bell jar of an air-pump in good order and exhausted it, leaving the other two undisturbed. The blood happened to be slow in coagulating; and at the end of about forty minutes, in the vessels where the blood had been undisturbed there was only a slight film of coagulum on the surface, whereas the blood under the vacuum was found on examination to have a very thick crust of clot upon it. But during the process of exhaustion the blood had bubbled very much. Indeed, any exhaustion of blood recently drawn which is sufficient to cause the evolution of its gases induces great bubbling, so that the pump cannot be used freely for fear of the froth overflowing. To this disturbance, involving the exposure of successive portions of blood in the bubbles to the sides of the vessels, I was inclined to attribute the more rapid coagulation; but in order to prove the point I stirred for a few seconds the blood in one of the vessels hitherto undisturbed. After eight minutes I emptied the three vessels. I found that that blood which had not been disturbed at all, either by the vaccum or by the rod, was still almost entirely fluid, only showing a thin crust upon the glass and on the surface exposed to the air. The blood which had been subjected to the vacuum had a thick crust of clot on the surface, and the sides of the glass were also thickly encrusted, but it still contained a considerable quantity of fluid that could be poured out from its interior. But that blood which had been stirred for only a few seconds was a solid mass throughout. In other words, gentle stirring of the blood for a few seconds had much greater effect in producing coagulation than the protracted and efficient exhaustion which was continued for upwards of forty minutes, which was a considerable time after all evolution of gas, as indicated by bubbles, had ceased.

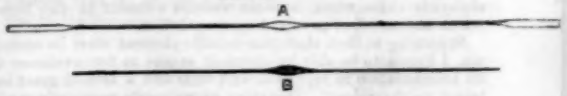
Other experiments precisely similar in their effect were performed. I therefore feel no hesitation in stating that the effects of a vacuum, regarding which, indeed, the statements of different experimenters have hitherto been conflicting, afford no evidence in favour of the ammonia theory.

There is another point of very great interest in the history of the coagulation of the blood, which has been supposed to give support to the ammonia theory; and that is, the effect of temperature. It has been long known that blood coagulates more rapidly at a high than at a low temperature, and, indeed, a little above the freezing-point remains entirely fluid. This seemed beautifully in harmony with the ammonia theory, as heat would naturally promote, and cold retard, the evolution of the alkali, and a depression of temperature to near the freezing-point might be reasonably supposed to prevent its escape altogether. Indeed, Dr. Richardson mentions as a fact, that ammonia artificially mixed with blood ceases to be given off under such circumstances.

Though thinking it not unlikely that this was the true explanation of the influence of temperature on coagulation, I thought it worth while to subject the matter to experiment. For that purpose I kept the blood of a horse fluid by means of a freezing-mixture, and afterwards by ice-cold water; and when the corpuscles had subsided from the upper part of the blood, I cautiously added to the liquor sanguinis extremely dilute ice-cold acetic acid till it was of distinctly acid reaction, the liquor sanguinis being of a colour that permitted the delicate application of test-paper, which is impossible with red blood. By this means any free ammonia which the fluid might have contained must have been neutralized; yet so long as it was kept in the cold it continued fluid, but when brought into a warm room it coagulated just as a specimen which had not been acidulated. Thus, when there could be no free ammonia in the liquor sanguinis at all, it was still affected as usual by temperature.

This experiment may not be satisfactory to all minds, though I confess it appears so to me; and as this is a point of very great interest, I have sought in another way for evidence regarding it. First, however, I will mention an experiment which will not at once appear to bear on the question of temperature. I drew out a fine glass tube in such a way as to produce a fusiform receptacle continued longitudinally each way into a tube of almost capillary fineness for about two inches, which again expanded at the end, as represented in Fig. 3. Having squeezed out a drop of blood from my finger, I

FIG. 3.



sucked up a portion into the tube till the receptacle (A) and its capillary extensions were filled. I then broke off the expanded ends, and placed the little tube thus filled (B) in a bath of the strongest liquor ammoniæ. Here certainly the blood was in circumstances in which it could not lose ammonia, but where any change in its amount must be by way of increase, and yet I found, on opening the receptacle by snapping it across after a scratch with a file, that instead of remaining longer fluid than in a watch-glass, the blood in it, being more in contact with the glass, was always more quickly coagulated, while coagulation was still more rapid in the capillary tube, where the blood was still more exposed to the influence of the foreign solid—the greater proximity to the liquor ammoniæ having no influence upon it.

It may perhaps be argued that the drop of blood employed being a small drop, and this small drop having been drawn up by suction into the tube, it might have parted with its ammonia before it got into the tube; but then (and now comes the bearing of the experiment on the effect of temperature) I found, if I placed a similar tube filled in the same way in a vessel of snow, so as not to freeze it, but to keep it ice-cold, the blood in it remained fluid as long as I chose to keep it there. Now if all the ammonia had left the blood before it was introduced into the tube, cold ought, according to the ammonia theory, to have had no effect in retarding its coagulation; for, according to that theory, cold operates by retaining the ammonia. On the other hand, if we take the other alternative, and suppose that any ammonia which the blood might have contained was still in these tubes, the former experiment proves clearly that the retention of ammonia has no effect in producing fluidity—no effect in preventing coagulation; and if the retention of ammonia has no effect in preventing coagulation, then cold certainly cannot prevent coagulation by retaining the ammonia, because, even if retained, it would not influence the result. In whatever way we look at them, therefore, these simple experiments prove conclusively that cold maintains the fluidity of the blood in some manner unconnected with any influence it may exert upon ammonia.

Then, again, I varied the experiment in this way. I placed such little tubes of blood in baths of liquor ammoniæ at different temperatures. By careful management, guarding against the volatilization of ammonia and consequent reduction of temperature, I succeeded in employing satisfactorily a bath of liquor ammoniæ at 100° F., the blood being in the bath within a few seconds of its leaving the vessels of my finger, and I found that the high temperature, though under such circumstances it could not possibly dissipate any ammonia from the blood, yet accelerated its coagulation in precisely the same way as when it was applied to blood in watch-glasses exposed to the air.

It is clear, then, that the promotion of the solidification of fibrin by heat is as independent of the evolution of ammonia as the coagulation of albumen under the same agency. Indeed it seems probable that the two cases are analogous, except that a higher temperature is required in the one than in the other.

When fine tubes containing blood were placed in liquor ammoniæ, the alkali acted only upon those parts which were close to the ends of the tubes; a very small portion was rendered brown by it, and beyond that a little was kept permanently fluid, but the chief length of the blood in the tube was un-

affected. Having thus ascertained that ammonia travels so slowly along tubes of this capillary fineness, I thought I might have an opportunity of giving the ammonia theory a fair test by tying such a tube as has been above described into the jugular vein of a rabbit, and filling it directly from the vessel, and then ascertaining whether there was any evidence of retardation of coagulation in the blood thus imprisoned. But I could discover no such evidence, although I sought for it in confirmation of a view I then held. To this, however, there is one special exception to be made—viz., in the case of asphyxia. I found that if two such tubes were filled from the same blood-vessel of a creature, one under normal circumstances, and the other after asphyxia had been induced, there was a most remarkable difference between the rates of coagulation of the blood in the two tubes, the asphyxial blood coagulating very much more slowly than the ordinary blood; but when the asphyxial blood was shed into a watch-glass, and air was blown through it, it coagulated rapidly, showing that in the state of asphyxia there must be some volatile element in the blood which has an effect in retarding coagulation.

Supposing at first that this volatile element must be ammonia, I hoped to be able by chemical means to find evidence of its accumulation in asphyxia, and thus add a fact of great interest to physiology. Imitating experiments previously made by Dr. Richardson, I passed air successively through blood and through hydrochloric acid, and then estimated the amount of ammonia acquired by the latter by means of bichloride of platinum. In order to prevent the possibility of the loss of any ammonia, I directed blood from the carotid artery of a calf fairly into a Woulfe's bottle by means of a vulcanized india-rubber tube tied into the vessel, and then drew a certain volume of air through it by means of an aspirating jar, the experiment being performed first before, and then during asphyxia. The same procedure was adopted with a second calf, the animal being in each case under the influence of chloroform, which does not interfere with the development during asphyxia of the peculiarity in the blood above alluded to; but I could not find satisfactory evidence of accumulation of ammonia; and, without going further into the question at present, I may say that it seems much more probable that the effect is due to carbonic acid, which is known to have a retarding influence on coagulation, and which probably accumulates greatly in asphyxial blood.

But in justice to the author of the ammonia theory, and to myself too, who at one time expressed a qualified belief in it, it is but fair to say that this theory is extremely plausible. It has been well shown by Dr. Richardson that ammonia is a substance well fitted to keep the blood fluid if it be present in a sufficient quantity. An experiment of my own illustrates very well the same point. I drew out a tube about a quarter of an inch in calibre (Fig. 4), so that while for two inches at one end

FIG. 4.

it retained its original width, the rest (some ten inches) was pretty narrow, though far from having the capillary fineness of those before described. Into the thick part I introduced a drop of strong liquor ammoniæ (A), and then securely corked that end of the tube (C). The object of this was that there should be a strong ammoniacal atmosphere in the narrow part of the tube. I then opened a branch of a vein (V) in the neck of a sheep, introduced the narrow end of the tube into the vessel, and pushing it in so that its orifice should be in the current of the main trunk of the vein, tied it in securely. I then removed the cork and made pressure on the vein at the cardiac side, causing the vessel to swell and blood to pass into the fine part of the tube; and before the blood had reached the part of the glass moistened by the ammonia, I put in the cork again and withdrew the tube. In a short time, on introducing a hook of fine wire into the extremity of the tube, I found the blood already coagulated; but on filing off a small portion of the tube, I found the blood there fluid. The portion of blood thus exposed soon coagulated, when, a second small piece of the tube being removed by the file, fluid blood was again disclosed, which again soon coagulated; and this proceeding was repeated with the same results time after time, till, near the thick part of the tube, the ammonia in the blood was so strong as to prevent coagulation altogether.

This experiment illustrates how fitted the ammonia is to maintain the fluidity of blood, and also how apt it is, when present in the blood, to fly speedily off from it, leaving it unimpaired in its coagulating properties; and it must be confessed that the end of the tube sealed with a small clot resembled most deceptively the extremity of a divided artery similarly closed. But although the experiment seems in so far to favour the ammonia theory, it will tell differently when I mention the object with which it was performed. It appeared to me that, if the cause of the fluidity of the blood was free ammonia, then, if I provided an ammoniacal atmosphere in the tube, and introduced blood by pressure directly from the vein into this ammoniacal atmosphere, this blood, lying between the strong ammoniacal atmosphere on the one side and the ammonia naturally present in the blood within the vein on the other side, ought to remain fluid; and if it did remain fluid, this would tend to confirm the ammonia theory by making it appear that the volatile material was the same at both ends of the tube. But, to my disappointment, I invariably found that if I drew away the tube after a few minutes only had elapsed, there was already a clot in its extremity; in other words, the ammonia had diffused from the end of the tube into the blood within the vein as into a non-ammoniacal atmosphere. This experiment alone, if duly considered, would, I think, suffice to show that the blood does not contain enough ammonia to account for its fluidity.

One more experiment, however, may be adduced with the same object. I mounted a short but wide glass tube, open at both ends (T, Fig. 5), upon the end of a piece of strong wire (W), and connected with the latter a coil of fine silver wire (S) so that it hung freely in the tube. I then opened the carotid artery of a horse, and through the wound instantly thrust in the apparatus so far that I was sure the tube lay in the common carotid, which in veterinary language means the enormous trunk common to both sides of the neck of the animal. The tube being open at both ends, and slightly funnel-shaped at that end which was directed towards the heart, had thus a full current of arterial blood streaming through it. Having ascertained how long the arterial blood took to show the first appearance of coagulation in a watch-glass, I very soon after removed the apparatus, and, on taking out the coil of silver wire, found that it was already crusted over with coagulum. Yet here assuredly there had been no opportunity for the escape of ammonia.

FIG. 5.

From this experiment it is obvious that there is a very great difference between ordinary solid matter and the living vessels in their relation to the blood. But the same conclusion may be drawn much more simply from experiments which I had the opportunity of performing after making an observation which it seems strange should have been left for me to make, and which, I may say, was made by myself purely accidentally; and this is, that the blood of mammalia, though it coagulates soon after death in the heart and the principal arterial and venous trunks, remains fluid for an indefinite period in the small vessels. If, therefore, a ligature be tied round the foot of a living sheep a little below the joint which is divided by the butcher, the foot being removed and taken home with the blood retained in the veins by the ligature, we have a ready opportunity of investigating the subject of coagulation, and of making observations as satisfactory as they are simple. Here are two feet provided in the way I have alluded to. A superficial vein in each foot has been exposed. The veins, I see, have contracted very much since I reflected the skin from them before our meeting; and I may remark that such contraction, dependent on muscular action, may occur days after amputation, indicating the persistence of vital properties in the veins. Now as I cut across this vein blood flows out, fluid but coagulable. Into the vein of this other foot has been introduced a piece of fine silver wire, and when I slit up the vein you will see the effect it has produced. Exactly as far as the silver wire extends, so far is there a clot in this vessel. Now this experiment, very simple as it is, is of itself sufficient to prove the vital theory in the sense that the living vessels differ entirely from ordinary solids in their relation to the blood. It is perfectly clear that by introducing a clean piece of silver wire (and platinum or glass or any other substance chemically inert would have had the same effect) I do not add any chemical

material or facilitate the escape of any, and yet coagulation occurs round about the foreign solid.

Again, if a bloodvessel be injured at any part, coagulation will occur at the seat of injury. As a good illustration of this, and also as bearing upon the ammonia theory, I may mention the following experiment. Having squeezed the blood out of a limited portion of one of the veins of a sheep's foot, and prevented its return by appropriate means, I treated the empty portion with caustic ammonia, the neighbouring parts of the vein being protected from the irritating vapour by lint steeped in olive oil. After the smell of ammonia had passed off I let the blood flow back again, and left it undisturbed for a while, when I found on examination a cylindrical clot in the part that had been treated with ammonia, while in the adjacent parts of the same vessel the blood remained fluid. I repeated this experiment several times, and always with the same result: where the ammonia had acted there was a clot. The chemical agent used here was one which, so long as any of it remained, would keep the blood fluid; yet its ultimate effect was to induce coagulation, the vital properties of the vein having been destroyed by it.

If a needle or a piece of silver wire is introduced for a short time into one of the veins of the sheep's foot, it is found on withdrawal to be covered over with a very thin crust of fibrin; whereas the wall of the vessel itself is never found to have fibrin or coagulum adhering to it, unless it has been injured. Now this seems to imply that the ordinary solid is the active agent with reference to coagulation; that it is not that the blood is maintained fluid by any action of the living vessels, but that it is induced to coagulate by an attractive agency on the part of the foreign solid. We see at any rate that the foreign solid has an attraction for fibrin which the wall of the vessel has not.

And yet I own I was at first inclined to think that the bloodvessels must in some way actively prevent coagulation. There were two considerations that led to this view; one was that the blood remained fluid in the small vessels after death, but coagulated in the large. Now why should that be? It seemed only susceptible of explanation from there being some connexion between the size of the vessel and the circumstance of coagulation. It looked as if in the small veins the action of the wall of the vessel was able to control the blood and keep it fluid, but that the large mass in the principal trunks could not be so kept under control. The other circumstance was the rapid coagulation of a large quantity of blood shed into a basin. Why should this occur unless there was some spontaneous tendency in the blood to coagulate? It seemed scarcely credible that it was the result of contact with the surface of the basin.

Both these notions, however, have since been swept away. In the first place, I have observed recently that it is by no means only in small vessels that the blood remains fluid after death. If blood be retained within the jugular vein of a horse or ox by the application of ligatures, either before or after the animal has been struck with the poleaxe, it will often continue fluid, but coagulable, in that vessel, which is upwards of an inch in diameter, for twenty-four or even forty-eight hours after it has been removed from the body. I say often, but not always. The jugular vein seems to be in that intermediate condition, between the heart and the small vessels, in which it is uncertain whether it will retain its vital properties for many hours, or will lose them in the course of one hour or so. Unfortunately for my present purpose, it happens that in this jugular vein, removed from an ox six hours ago, coagulation has already commenced, as I can ascertain by squeezing the vessel between my fingers. But now that I lay open the vessel, you observe that the chief mass of its contained blood is still fluid, and we shall at all events have an opportunity of seeing that what is now fluid will in a short time be coagulated. It is an interesting circumstance with reference to the question which we are now considering, that the coagulation always begins in contact with the vein, indicating that it is not the wall of the vessel that keeps the blood fluid, but that, on the contrary, the wall of the vessel, when deprived of vital properties, makes the blood coagulate.

The observation of the persistent fluidity of the blood in these large vessels furnished the opportunity of making a very satisfactory experiment which I hoped to have exhibited before the Society, but as there was some clot in the vein I did not think fit to run the risk of failure. The experiment is performed in the following way. A piece of steel wire is wound spirally round one of the veins in its turgid condition, and with a needle and thread the coats of the vessel are stitched here and there to the wire, care being taken to avoid puncturing the lining membrane, and thus the vessel is converted into a rigid cup. Two such cups being prepared, and the lining membrane of the vein being everted at the orifice of each so as to avoid contact of the blood with any injured tissue, I found that, after pouring blood to and fro through the air in a small stream from one venous receptacle into the other half a dozen times, and closing the orifice of the receptacle to prevent drying, the blood was still more or less completely fluid after the lapse of eight or ten hours. On the other hand, if a fine sewing-needle is pushed through the wall of an unopened vessel so that its ends may lie in the blood, it is found on examination, after a certain time has elapsed, that the needle is surrounded with an encrusting clot. It is scarcely necessary to point out how entirely the ammonia theory and the oxygen theory, as well as that of rest, fail to account for facts like these.

While the blood may remain fluid for forty-eight hours in the jugular vein of a horse or an ox, it coagulates soon after death in the heart of very small animals, such as mice; so that it is obvious that the continuance of fluidity in small vessels is not due to their small size.

(To be concluded.)

Lumleian Lectures.

ON THE

FORMATION OF MUCUS AND PUS.

Delivered before the President and Fellows of the Royal College of Physicians in Lent, 1863,

BY THOMAS K. CHAMBERS, M.D.,

HON. PHYSICIAN TO H.R.H. THE PRINCE OF WALES, PHYSICIAN TO ST. MARY'S AND THE LOCK HOSPITALS, ETC.

LECTURE I.

MR. PRESIDENT,—The subject which I have chosen for these Lumleian Lectures is one which in a paramount degree must be interesting to physicians above all other observers of nature. A physiological Fellow of our College was in the habit of reckoning his patients as so many "mucous membranes." On his retirement from active practice he said, "I have taken my last fee from my last mucous membrane." I do not think his term was an exaggeration, for in very few indeed of the cases administered to by us has not either the cause of the death acted on the body through these integumentary coverings, or manifested its action by a perversion of their functions. A great majority of our drugs are intended to act on mucous membrane, and all are introduced into the body through it. We cannot therefore but be grateful to those who have endeavoured to add to our knowledge of its nature and habits.

The term by which it is conventionally designated is apt to lead the most thoughtful of us into a fallacy. Active members of society are named after the work which is their most important occupation. The industry of the lawyer is the administration of the "law;" the doctor is most efficient when he is most "learned;" the duty of bishops and overseers is ἐπισκοπεῖν, "to oversee" each their several departments. But the office of mucous membrane is *not* to secrete mucus. It is most active when it is not doing so, and its activity is decreased just in proportion to the copiousness of the mucus. Typical health certainly consists in its absence; many robust people pass weeks without expectorating; many find their handkerchiefs clean and unrumpled after being days in their pockets, in spite of all the artificial and accidental irritants to which the Schneiderian membrane is subject; and the urinary and intestinal canals contribute only an infinitesimal quantity, which may fairly be attributed to a temporary departure from health of some fraction of their large area.

The business of mucous membrane is to offer a passage for oxygen, water, fat, albumen, and other nutrimentary substances, and to defend the less easily renewed tissues beneath it from the deleterious action of external agents. These func-

tions it best fulfils when it is bedewed with a moderate watery exhalation, and not with mucus.

This exhalation is transparent and watery, and possesses nothing of that stringy adherent character by which we ordinarily recognise the substance known as mucus. It carries out with it the epithelium scales shed or moulted from the surface; and these scales are consequently found in the excretions; but it is itself absorbed again as quickly as it is exhaled, and does not contribute to the substance of any of the ejecta of the body. The typical healthy condition of a mucous membrane may be considered to be a constant dampness without visible fluid, and a moderate and gradual shedding of epithelium.

Shed epithelia are found also in mucus, but not as a peculiar characteristic, nor modifying its physical properties. Its most obvious characteristic is the presence of transparent bodies, apparently of a gelatinous consistence, of a more or less rounded or oval form, and with one or more nuclei, seemingly of a less transparent consistence, in their interior. But its physical properties of consistence and adhesiveness, which so peculiarly distinguish it from all other transparent fluids, seem to be derived from the medium in which these globules are placed. It seems to be so derived because similar globules, quite undistinguishable in appearance and behaviour, constitute also the bulk of pus, a fluid of quite distinct attributes and properties.

There are probably no observations more suggestive and luciferous to rational medicine than those contained in the paper of Henle published about a quarter of a century ago in Hufeland's Journal. It is an excellent example of physiological reasoning, and later observation seems to set the matters of which it deals beyond reasonable doubt.

Professor Henle's argument aims, successfully I think, at tracing the globules which are seen in mucus under the microscope to that substance which in the normal state of typical perfection would form epithelium. They appear to be young epithelium arrested in its growth, and prematurely moulted off from the body. The condition which produces them is an arrest of development.

To feel the full force of the experiments and observations which confirm this view, it is necessary to see the connecting links of resemblance which run through the course of the integumentary membranes. We must pass over for the nonce the differences which fit for their various uses the external skin, the covering of the tongue and mouth, the secreting lining of the stomach, the absorbing lining of the intestines, the defensive coats of the bladder, urethra, rectum, &c. We must look upon them as one whole. Just as the skin clothes the muscular framework of the body, moulded on the form of the skeleton, so the mucous membrane lines the internal canals, pits, and galleries, following their intricate windings throughout. And for exactly the same purpose—namely, to be a defensive medium of communication between the individual being and the outer world, between the microcosm and the megalocosm, in all their chemical and mechanical relations to one another.

For the fulfilment of this common duty they have a common structure. Strip off a piece of epidermis, and you find that its outermost layer consists of flat polygonal scales pressed close together and united both by the edges and surfaces so as to form a continuous leathery tissue. They are welded into one fabric like the exposed part of an old macadamized road. But just as, when you pick up the surface of this road, you expose a deeper layer of stones loose and separate, so beneath the scarf skin you find what Malpighi, with philosophical prescience, called the *rete mucosum*. This consists, like the scarf skin, of separate corpuscles, which, like the stones of the macadamized road, become looser in structure, less adherent, and less similar to the upper layers as you go deeper. The superior corpuscles are, indeed, flattened, and exhibit a flattened nucleus enclosed in a clear cell as an epidermoid scale. But as you get nearer the cutis the nuclei are rounder and rounder, and the transparent area of the cell is less and less visible; until at last, on the cutis, the corpuscles are seen to consist of only granular masses. These granular masses are identical with those seen in mucus.

Just in the same way the mucous membranes are clothed with epithelium, loosely scaly in some parts, welded together like a macadamized pavement in another, columnar in another. And when this is stripped off or injured, there are brought into view floating granular masses of various sizes, which constitute what are familiarly known as "mucous globules." They are exactly identical with the inner strata of the epidermis, the *rete mucosum* of Malpighi.

What are these globules? Are they something special, belonging to special tissues, and appearing only under special circumstances? Or are they a form of organic matter common to other parts also. Are we to apply here the Baconian myth of Proteus, and look for their *natura naturans* as exhibited elsewhere in various shapes? I think it is philosophical to do so.

The appearance they have is that of all matter when it first puts on life. The telescope and the microscope equally reveal to us these nebulæ as the earliest indication of vitality, drawing the surrounding chaos towards a central point, then exhibiting that central point as a kernel or nucleus. And then this kernel becomes the parent of new centres, individual and separate, and these again starting places of new action. The dawn of vitality is exhibited in the coalescence of molecules of organic matter so as to form nuclei, which, under favourable circumstances, develop either separate cells or tissues.

Up to this point each focus of life seems to be a separate individual. It takes in nourishment by its innate power from without; it increases in size and alters in shape. And this alteration in shape seems principally to take place from within. It is not merely an aggregation outside of new molecules, but a plastic change of internal appearance. Nay more, it possesses the faculty of giving birth to an individual, and so to a succession of individuals, like itself. No better evidence of automatic existence can probably be given.

These phenomena can be seen without much difficulty in the globules of mucus. That which answers best is what we often expectorate in little semi-transparent gelatinous lumps from the bronchi in the morning after exposure to night air. This must not be mixed with water, or be allowed to cool, but kept at the temperature of the body, and put immediately under a lens of as high a power as you can command. Dr. Beale showed me the phenomena first under a 24th, but I have seen them very well under an 8th inch in an old-fashioned Powel's microscope. Keep your eye fixed on one nuclear mass, and you will often see a gradual change in its appearance. First a clearer nucleus appears in it; then, as you gaze, two, three, or more smaller nuclei. Then the fine granular specks in its sides coalesce into a nucleus. Then you see that it has a bulge in its side, and that a nucleus forms a bud, and then has a constricted neck or stalk. And then, perhaps, if you are lucky enough to get the mucus in motion without losing sight of your object, the bud may float off as a separate globule. Or the whole globule may divide into two, each with a separate nucleus.

A temperature below that of the body seems to check this development, but you may often keep it on by means of a spirit-lamp. The globules in which I have seen it take place are those from the trachea, from the os uteri, and from warm freshly-passed urine in cases of inflamed bladder.

When the fluid has got dried up by the heat thus constantly applied, you may in some degree restore its activity by moistening it with a viscid animal fluid, such as saliva. The greater part, indeed, is broken up into molecules, and these show no disposition to unite into globules, but among them will remain some globules unbroken, and these will again form new nuclei, and bud as they did at first.

Is this organic growth? Or is it the aggregation into visible masses of particles already existing, like that which Mr. Rainey has described as taking place in mineral matters? Is it a mere coalescence, or something more? I must say that to my mind the production of an individual like itself, capable again of reproducing another individual still resembling the grandmother globule, is identical with organization. And I think, too, that the multiplication of the nuclei inside is quite unlike any sort of coalescence, which would add matter to the outside, like an urinary calculus or an avalanche.

It seems to me that each of the globules contains a centre of life, into which the pabulum passes from the outside, nourishing them and giving them means to increase in number. This would account for the enormously rapid collection of mucus filled with globules on inflamed membranes, even on membranes which in the healthy state shed very little epithelium, or have but one layer of it, as in the bronchi, and therefore cannot be

supposed naturally to form much young epithelium. The first parent globules may be aborted young epithelium cells, and these may be the ancestors of others which form the bulk of the mucus, begetting them with the extreme rapidity characteristic of generation in low organic life.

If this be true, mucus may be viewed as a parasite, receiving from the body its nutriment indeed, but not its form nor its claim to vitality.

Doubtless the growth of mucus is most rapid where there is normally a thick layer of epithelium, and where a large growth of young epithelium is constantly being formed to replace the rapid moulting. But still it is much quicker on localities with a thin layer than could be accounted for by each globule being an aborted scale; there could not be enough aborted scales to furnish so much mucus so full of globules. I believe, therefore, that it grows on the surface by their budding and splitting in continuous succession.

If you compare pus which has been some time accumulating on the surface of a mucous membrane with that which is being freshly formed, you will remark a decided difference in the globules they contain. Take some accessible mucous surface—the eye, or the vagina, for example—thickly covered with opaque secretion, and you will find the globules nearly all of a size, even and spherical. Then wash it clean with cold water, and examine the first-formed secretion: the globules are of all sizes and of irregular shapes, oval, bulging, budding, with or without nuclei. This seems to indicate a general change of form by time—a certain completion of creation in that which has been longest formed.

When we see, as I have described, the globules of mucus budding, dividing, and subdividing in active haste—new foci of independent vitality generated and multiplying even when separated from the body,—it might appear that a local increase of life was being exhibited. Certainly a greater bulk of living substance is formed by a membrane secreting mucus or pus, than is the case in the healthy state; for the secretion outweighs by a hundredfold the daily quantity of epithelium which its original material was destined to make. But what sort or degree of life is exhibited by this secretion? Is rapidity of multiplication to be looked upon as evidence for or against force of vitality? Against, I think. The lower we go in the scale of creation, the more quickly and the more copiously do the living forms representing the various classes reproduce their kind. The less functions and force and intensity of existence they have, the more prominent becomes reproduction as the main object of their being created. This seems to be the universal rule, to be traced all through living beings till we get down to the Amœba and the mould, in which no trace of a function can be detected beyond the multiplication of their simple substance.

Here, indeed, it becomes difficult to draw the line between organic and inorganic. Instead of being in contrast and in conflict with the physical forces of inanimate nature, vitality seems to obey laws which closely resemble them. The main point of distinction seems to be the growing from a centre outwards of organic, and the aggregation towards a centre of inorganic, individuals.

When organic matter destined to form part of an animal has attained the end of so becoming a member of a consistent whole, it ceases to multiply itself. Cells do not normally go on splitting up and producing cells similar to themselves in situ. The highest development of their vitality is ceasing to exist as growing matter. A fully-formed epithelium scale does not produce another scale, nor the nucleus of a muscular fibre another nucleus. The retention of reproductive force is an expression of the lower and an exclusion from the higher functions of life.

In the mucous globule, then, we find organic matter, whose destination was the formation of epithelium, arrested in its development when it has attained only the lowest degree of life—that lowest degree of life being the function of reproduction.

LUNATICS IN WORKHOUSES.—The Commissioners in Lunacy state, in their last report, that they have never ceased to be of opinion that workhouses are altogether unsuitable for the treatment of the insane, and that many curable cases are thus kept in gloomy unfurnished wards, with low diet, and narrow airing courts, until their disease becomes chronic, and their cure hopeless. Yet a return, just issued, stated that in the single year (1861) no less than 5072 lunatics were received into workhouses in England and Wales. In the majority of instances there is no lunatic ward in the workhouse, and the insane, if not dangerous, are mixed with the sane.

CASE OF SPONTANEOUS CLOSURE OF THE AXILLARY ARTERY AFTER DIVISION BY A GUNSHOT WOUND;*

RECOVERY OF THE PATIENT.

BY W. C. CALTHROP, ESQ., M.R.C.S.,
SURGEON AND AGENT TO H.M. COAST-GUARD.

ON the 18th of June, 1858, I was summoned to attend a young gentleman aged about fifteen years, the son of Mr. S——, of Maltby-le-Marsh, Lincolnshire. He had been seeking in a ditch overhung by a hedge for a bird he had just shot. In searching he used the butt-end of his gun, which was reloaded and on full cock. He was at the time standing on the edge of the ditch, and holding the gun in his right hand, which was about twelve inches from the muzzle. In order to reach sufficiently low in the ditch he was obliged to stoop his body forward pretty much, which brought the anterior and posterior margins of the axilla almost in a line with the axis of the gun-barrel. While in this position the trigger became entangled and the discharge occurred.

He considers that the muzzle of the gun could not be more than twelve nor less than six inches from his shoulder at the time. It was loaded with No. 4 shot. He walked immediately to a house very near at hand, which however he had much difficulty in reaching, and lay upon the floor in a deep faint; indeed, extreme faintness continued until I saw him. On the way to the house, which was distant about a hundred yards, the blood, to use his own expression, "pumped from the wound." The bleeding was immense. As the accident occurred some miles away from my residence, it was nearly two hours before I saw him. On my way I met Mr. Arkwright, of Accrington, a medical friend, who kindly accompanied me, and gave me the benefit of his assistance and advice, concurring at the same time in my diagnosis. The patient, on returning to consciousness, did not seem at all afraid or nervous about himself. The countenance was more blanched than any I ever saw, the lips being quite white, like paper. The pulse on the sound side could scarcely be felt, and that on the wounded side was not perceptible at all. A bandage had already been placed outside his dress over the wounded part, and this for the moment was allowed to remain. The extreme prostration appeared to demand peremptorily a stimulus, and, as there was not any actual continuance of hæmorrhage, a small quantity of brandy-and-water was given, which helped to revive him. He was allowed to remain a short time perfectly quiet, and gradually recovered sufficiently to be removed to his father's house, about five hundred yards distant. This was done with great care; and as no renewal of the hæmorrhage had taken place, examination of the wound was deferred until he had been placed under circumstances more favourable for operation, if necessary, or for having recourse to whatever measures the possible exigencies of the case might require.

He was placed in bed, upon a mattress, in a large airy room, with the windows open, and an anodyne was given to him. The axilla was less swollen or infiltrated than I should have expected from what, owing to the loose condition of the cellular texture in the axilla, is common in such cases. The wounds were treated with cold water changed every few minutes throughout the night. His father, a gentleman of great intelligence, undertook the charge of applying them, as well as the after-care of him, scarcely leaving his son's bedside at all for the first fortnight. To the constant and careful fulfilment of this duty, especially in the early period of the treatment, I attribute in great measure the successful restraining of the hæmorrhage, and the capability of dispensing with surgical operation.

In accordance with the long-established rule in surgery, which I cannot express better than in the words of Mr. C. H. Moore, (in his recent paper on Wounds of Vessels, in the "System of Surgery, by various authors," vol. i., p. 690,) that "no surgical operation should be performed with the object of securing a wounded artery unless it be actually bleeding," I did not further interfere. Under apprehension, however, of a fresh outburst of hæmorrhage, Mr. S—— was made acquainted with the means to be used, if necessary, until my arrival, and had great facility in comprehending in what way

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* For this paper the author was awarded the silver medal of the Medical Society of London.

they were to be employed. Happily, time passed on and no renewal of hæmorrhage took place.

How frequently spontaneous cessation of hæmorrhage occurs on the field of battle, or how long life might continue, and final cure follow, without any operation, could prompt attendance and care always be at hand, military surgeons do not, and indeed cannot, state. Amongst the occurrences, however, of civil life we find extraordinary instances of large arteries, the largest in the body even, being wounded, in which the duration of life is longer than might be expected—cases which scarcely leave room for surprise that the patient to whom this paper refers was able to walk, even with difficulty, to the place where syncope overtook him. "No. 1566 in the pathological series of the Hunterian Museum is a part of the thoracic aorta of a man ruptured transversely through all its coats and round nearly five-sixths of its circumference. He was supposed to have lived ten minutes after a waggon passed over his body." "In the museum of the Middlesex Hospital is the lower part of an abdominal aorta cut half across by a pistol bullet. The patient was under the care of Mr. Shaw, surgeon to the hospital, who had the opportunity of ascertaining that he survived the injury for an hour and a quarter."*

The temperature of the arm on the wounded side rapidly fell, and it was therefore enveloped in worsted and flannel coverings, but still without restoring its warmth. On the fifth day of the accident there appeared to be a disposition to mortification, with a sensation (but probably a mistaken one) of slight crepitation in the cellular tissue. Under these circumstances, I requested that I might have the advantage of the opinion of Mr. Hewson, of Lincoln. As the result of our consultation (in which Mr. Hewson's view of the nature of the injury was the same as my own), he advised the continuance of my former treatment; but proposed the use of wool, as it comes from the sheep's back, to be wound round the arm in lieu of the cotton-wool, worsted, and flannel; which plan, indeed, appeared to answer the purpose of preserving the warmth of the limb better.

The case was at a later period seen by Dr. Chowne, who entertained an apprehension, but not a conviction, that the axillary artery itself was divided. On seeing the patient again, however, after sufficient time had elapsed to show the permanent effects of the injury on the muscular power of the limb, he concluded that division of the main artery had taken place.

Until suppuration had ensued, which was on the ninth day, the patient had very light and spare diet, with an occasional cup of tea and frequent doses of laudanum, which latterly required to be large. As the suppuration advanced, the pain, which had been extreme, abated, and the quantity of laudanum was diminished. He was now allowed brandy, and had ammonia with bark as an additional stimulus. He had animal food, chiefly mutton, *ad libitum*, and porter, of which he availed himself very heartily. At this time poultices were used instead of the cold cloths. There was not anything peculiar in the after-treatment. The suppuration gradually diminished; the wound of entrance (*b*, Fig. 1) healed kindly; but that of exit (*a*, Fig. 2) indicated the existence of irritation from a portion of dead bone, of which a few small pieces were at a later period extracted; after this the wound granulated very healthily, and was completely healed about four months after the injury.

The charge of shot entered and pursued its course almost as a ball or any other compact body would have done, being discharged at so short a distance from the wounded part. Its entrance was at the lower and anterior part of the axilla (at *b*), just passing over the lower fibres of the pectoralis major; its exit was at *a*, as shown in the engraving, at a point a little distance below the glenoid cavity of the scapula—probably dividing or injuring the long head of the triceps. Some of the shot, however, were deflected, and passed completely under the scapula, and were felt under the skin between the base of the scapula and the vertebral column.

During the first winter after the injury the fingers almost perished, gradually shrinking away and turning black. Eventually a portion of their ends sloughed, but left healthy granulating surfaces, which ultimately healed kindly. At this time the patient was taking cod-liver oil. When spring came round the fingers partly refilled, and looked rather more natural. Whether this was owing altogether to the return of warm weather, or partly, or indeed mainly, to improved circulation in anastomosing arterial branches, I do not venture to affirm; yet the latter was most probably the main cause, and this appears to be the more likely, as, during subsequent winters, equally cold, the hand has not suffered nearly so much, although he still, both in winter and summer, has it protected by being wrapped up in cotton wool.

FIG. 1.

FIG. 2.

I have stated that on my first visit after the accident the pulse in the wounded arm was not perceptible—that is to say, neither the radial nor the brachial artery could be perceived to move in any part. This continued until the twenty-ninth day, when I thought I could perceive a slight thrill in the radial, and also in the brachial; the highest part at which this thrill could be felt was about the upper portion of the middle third of its course.

* Holmes's System of Surgery, vol. i., p. 668. Trans. Pathological Society of London, vol. x., p. 168.

As the hæmorrhage ceased spontaneously, and as recovery followed without the wounded vessel being tied, a first impression might very reasonably arise, that the axillary artery could not be that which was wounded; but surgeons are daily becoming less subservient to the dicta of ancient authorities, and now judge of events on their own peculiar merits. I from the first came to the conclusion that the divided artery *was* the axillary, and subsequent occurrences and collateral facts are in accordance with that, and at variance with the opposite belief; these facts, moreover, are not hypothetical, but tangible and demonstrable.

In reflecting on the case, certain sets of circumstances require to be carefully considered.

1. The profuse hæmorrhage at the moment of the injury.
2. The absence of pulsation in the brachial and radial arteries, after it had been restored in the sound limb.
3. The immediate loss of heat and of sensation in the wounded limb.
4. The permanently injured circulation, the permanent diminution or almost entire loss of sensation, the extreme wasting, and the persistent absence of muscular power, in almost all the muscles of the wounded limb.

Although, in consequence of the great mobility of the arm on the shoulder-joint, the exact situation of the axillary artery in relation to other parts is very different at different times, and although even the cicatrices left by the wounds of entrance and of exit of the shot (as shown in the engravings) are not infallible guides as to the relative place of that artery at the moment of the injury (since the artery would follow the movements of the humerus, while the cicatrices remain nearly stationary), yet we find sufficient evidence of the real track of the shot in the *injuries of certain parts* and the *immunity of others*.

So strongly impressed upon the minds of surgeons has been the opinion that when the axillary artery is divided it *must* either be tied or the patient must die, that I am sensible of the necessity of adducing other evidence than inferences drawn from the supposed position of the parts at the moment of the wound being inflicted, in support of my belief that the present is an exception to such rule.

Collateral evidence derived from the state of the circulation and of other functions in the wounded arm.—When syncope, during which the hæmorrhage was arrested, had passed away, and a very perceptible pulse had returned in the sound arm, not the slightest movement existed in the vessels of the wounded arm; and at the same time, while normal sensation and normal temperature and power of motion remained in the sound arm, the wounded arm had lost its sense of feeling almost wholly, the hand was useless, and the limb became almost icy cold.

Collateral evidence deduced from the anatomical position of the arteries.—We are aware that there are few arteries in the body more liable to varieties as to the exact points at which they are given off from their respective trunks than those of the axillary; but the normal origins and the normal distributions are those only which we are at liberty to assume for our reasoning in the present case.

Of the large branches given off from the axillary artery—viz., the thoracic, the subscapular, and the posterior and anterior circumflex—both the thoracic and the subscapular are situated too high up in the axillary region to be *in* or even *near* the shot track. The circumflex arteries are indeed sufficiently low to have been in a doubtful position as to danger of being wounded; but then they are so situated in relation to the nerves, that if either had been wounded, the muscles which in the present instance have lost their power would have retained it. However improbable a spontaneous arrest of the hæmorrhage, followed by what may be called the spontaneous final closing of the divided axillary artery might seem, yet all the circumstances immediately attending the accident, the circumstances attendant on the progress and treatment of the case, and those also which have been persistent and exist at the present time, are in accordance with the opinion that the artery divided was the axillary.

Collateral evidence derived from the injured nerves.—With regard to the nerves, I need not say that we may with great exactitude deduce from the loss of sensation or of nervous power in any given part or muscle the particular nerve or nerves that have suffered. In the present instance the parts and the muscles which have lost sensation and power of motion are supplied by nerves which lie in close juxtaposition to the axillary artery, so close indeed, that the vessel being divided, the nerves must be divided also; and on the other hand, if it had been either of the large branches given off by the axillary instead of the axillary itself that had been divided, the parts and muscles which have now suffered in sensation, in motion, and in bulk, would have escaped.

Two very important nerves—indeed the main nerves of the arm, forearm, and hand—the median and the musculo spiral, which in the situation of the wound lie, the one directly upon or in front of the axillary artery, the other directly behind or under it, are, there is every reason to believe, both divided.

Although scarcely any muscle of the shoulder, the arm, or the forearm retains the whole of its normal power, yet some which are mainly supplied by nerves which we have reason to believe have escaped injury, are still enfeebled as a consequence of the low vital state to which the limb is reduced from deficiency of nutrition. The deltoid, for example, supplied by the circumflex, which is derived from the posterior cord of the brachial plexus, is not strong, although, together with the trapezius, it raises the arm above the horizontal line. The biceps, the coraco-brachialis, and the brachialis anticus, although wasted, retain considerable power, being supplied by the musculo-cutaneous nerve, which is considered *not* to be wounded. The triceps, on the contrary, supplied by the musculo spiral, is both wasted and perfectly useless. The biceps and brachialis anticus can flex the forearm; but when the arm is raised to the horizontal position, the triceps is utterly unable to extend or to move the forearm in any degree from the flexed position, and the patient is obliged either to lift it and extend it by means of the sound hand, or to lower the arm and let the forearm fall into the extended position by its own weight. Although other muscles might be particularized in which loss of motive power is strictly coincident with the injury of nerves which must have suffered along with the artery, it will be sufficient to speak of them generally, and together with those of the forearm, the more especially as the low state of vitality in the limb, from the low standard of the circulation through it, is such as to conduce in itself to the loss of power. The pronators, flexors, supinators, and extensors of the forearm have all lost their power; and although there exists slight capability of flexing the fingers, that effect appears to be produced by the action of the biceps on the fascia of the forearm.

Collateral evidence deduced from the immunity of the vein.—Happily this disastrous accident did not involve the vein in the mischief which it has done, the shot having passed through the axilla in that section of the axillary region forming the lower third, which is admirably defined in Hancock's translation of Velpeau's "Anatomy of Regions," and is there called the "subpectoral triangle." In that part the vein is not in contact with the artery. Nothing contributes more to the defining of the exact situation of vessels than the operations which the surgeon may be called upon to perform; and Mr. Samuel Cooper says, in regard to the exact relative position of the axillary artery, and the difficulty of tying it in any part of the upper two thirds of its course, owing to the vein lying before and over it, and to the many nerves around it, that the difficulty is not so great in the lower third, as the same obstacles do not exist; and, still speaking of the axillary artery at this part, says, "at its inner side is the axillary vein."* I will venture to quote another authority. Mr. Erichsen, in speaking of tying the axillary artery, says: "Below the pectoralis minor the artery and vein will be seen lying parallel to one another, the artery *not being overlapped* by the vein, as it is higher up."†

Although it is true that the artery and the vein in this region are in near proximity to each other, and that the danger of the vein being wounded was so great as to render its escape seemingly almost impossible, yet I may remind the reader that in the case of a wounded soldier, adverted to in the "Transactions of the Pathological Society," a ball actually passed between the femoral artery and vein without opening either. This preparation, says Mr. Guthrie, "is unique, and is perhaps the only one in existence proving the elasticity which vessels possess, and their capability of avoiding to a certain extent an injury about to be inflicted on them."‡

It is not necessary that I should here state the broad fact that even large arteries, as the femoral or the axillary, are capable, by their own intrinsic powers, when completely divided, of arresting the passage of blood through them, without any assistance from art, or even from the support of the surrounding parts—a fact the knowledge of which must be indeed ancient; since theories have been propounded and quoted as to the means employed by nature, as well as by art, from Celsus, Rufus, Galen, and Ætius,§ and by later authors.

* Surgical Dictionary, p. 249.
† Erichsen's Science and Art of Surgery, p. 552.
‡ Guthrie on Wounds and Injuries of the Arteries. 1846. p. 22, case 24.
§ Guthrie: Lectures on some of the more important points in Surgery. Lecture II.

as Petit, Morand, Jones, Sharp, Gooch, White, Aikin, Kirkland, John Bell, Hodgson, Guthrie, and others.*

The fact is now familiar to most surgeons that the actual force with which blood circulates in divided arteries of the limbs is far from great. Perhaps a stronger instance cannot be given than that detailed by Dr. Young of "a soldier who was wounded at Ciudad Rodrigo by a large piece of shell, which carried away his arm and splintered the humerus to its tubercles. Part of the long muscles of the arm remained, and the humeral artery hung down two inches and a half below the ridge of the pectoralis major, which retained its attachment to the shattered bone. ..... The artery pulsated so forcibly to its very extremity, that, being wet, it felt inclined to slip from a loose hold of my fingers. The last eighth of an inch was contracted in diameter so much as nearly to close the orifice of the vessel, which was the size of a pin's head; and that orifice shut up by a little blood, merely a very thin layer of which covered the extremity of the vessel. On compressing the artery, and again permitting its action, and this frequently, the impulse given to the blood thus advantageously failed to remove this obstruction to its issue."† Mr. Guthrie cites the case of a soldier who had his arm carried away by the bursting of a shell. "The axillary artery, just as it was becoming the brachial, was torn across, and hung down lower than the other divided parts, pulsating to its very extremity." There was not any hæmorrhage, which Mr. Guthrie ascribes to "contraction of the very end of the artery." In this and in another instance of a similar nature, he cut off the end of the artery at less than an eighth of an inch from the extremity. In both, the vessel for nearly that distance was contracted so as to leave little or no canal at its orifice, which in these cases was filled by a coagulum of the size and shape of a very small pin.‡

We perceive that there are at least three well-defined and well-authenticated circumstances which contribute to the arrest of hæmorrhage from divided arteries, in addition to the influence of syncope.

1st. Formation of a coagulum within the vessel, as explained by M. Petit,§ forming what surgeons call a plug.

2nd. The coagulum forming such a plug within the vessel, *conjointly* with contraction of the orifice, together with the support given by surrounding coagula, as considered by M. Morand‖ and by Sharp;¶ and

3rd. Essentially or chiefly by contraction of the end of the artery, favoured by the languid circulation in bleeding arteries, even in the absence of external support from surrounding parts, as described by Mr. Guthrie.

On the 8th of March, 1861, Mr. Hancock saw the patient with me, and concurred in my opinion of the nature of the injury, and approved of the mode of treatment that had been pursued.

In the case which is the subject of this paper, we have reason to believe that all these favourable circumstances were present: syncope occurred early, and, moreover, the patient was soon placed in a recumbent and easy position, and was permitted so to remain, in a state of almost absolute freedom from muscular action. His clothes were permitted to remain on, and a bandage was placed lightly round the shoulder, but only sufficiently tight to serve as a support, and to keep the dress in contact with the wounds, rather than to bind any part of the shoulder or arm as a ligature.

Assuming that the circulation became languid or almost "nil" during the syncope, and that the wounded extremity of the artery contracted, these circumstances alone, according to the authorities above quoted, may be regarded as sufficient, without what has been called "the support of the surrounding parts in which the vessel is situated." Although that surrounding support might have been safely dispensed with (yet that, as a rule, it is a useful addition all agree), still it was present, and under the most advantageous condition. The extremity of a wounded artery we know commonly lies in a more or less open wound, offering free egress to the blood, and involving the great risk of death before surgical care can be obtained; but a wounded artery opening into the axilla is at once placed under the most favourable conditions for the retention of blood around it, and the consequent formation of coagula. The cavity of the axilla forms almost a shut sac, and certainly a "cul de sac" even with the *two* orifices produced by the injury, the egress of blood out of which would have to contend with the smallness of these wounds; and the blood would be very favourably placed for detention in the interstices of the cellular membrane of the part, and for giving support. The contact of the dress with the orifices of the wounds would render the formation of coagula within the axilla from detention of blood a still more easy occurrence. All the circumstances which were conducive to the arrest of hæmorrhage from the superior portion of the divided artery would, of course, equally conspire to a similar result in regard to the inferior portion of the artery; and with regard to the agency of any action in the extremity of the divided artery, it certainly appears, so far as is shown by Mr. Guthrie, that more is due to contraction than to retraction.

Collateral evidence deduced from the present state of the limb in regard to vitality.—I need not mention how often, in cases of obliteration of the trunk artery of a limb, gangrene, or a near approach to it, is the consequence. Preservation of the limb might be said to hang upon the quick or the slow restoration of circulation through the limb by means of the anastomosing arterial branches. The upper extremity, being shorter than the lower, and not requiring so great a length of time for the anastomosing process to be completed, and being also nearer to the centre of circulation, is more frequently rescued than the lower. We may see, indeed, in the struggle between loss of vitality in the limb and the effort to preserve it, an approach to that condition which we know under the appellation of "gangrena senilis" in some of its threatened forms. This condition is well described in the paper by Mr. Moore to which I have already referred:—"If the pulse has ceased beyond the injured part, the limb will become cold and pale, and care must be given to keep it warm, and to avoid all bandaging and malposition, by which the establishment of the collateral circulation might be interfered with. ..... Increasing coldness of its surface and a mottled appearance ..... indicate a languid circulation and threatened mortification. Even when the collateral circulation acquires a vigour sufficient to ensure the life of the limb, it is rarely the case that the latter regains its power in all respects. A limb in which the principal artery is obliterated generally remains for years in a state of feebleness and suspended nutrition. It is weaker, and, unless it be œdematous, smaller than its fellow; it is easily chilled, and may be permanently below the natural temperature. The sudden loss of the artery is sometimes never repaired by the establishment of vigorous collateral circulation; and the limb, though not dead, remains almost incapable of muscular exertion, emaciated, and cold."*

The loss of the ordinary sensibility of the limb, the extreme reduction of its temperature, and the great absence of muscular power, have been already spoken of; it remains, however, that the *present* (Jan. 1863) condition of the limb as regards emaciation should be stated. The respective measurements of the two limbs are,—

	The sound limb.	The injured limb.
Round the shoulder	16½ inches	14½ inches.
Round the middle of the biceps,	11½ „	8½ „
Two inches below the elbow ...	11½ „	6½ „
Wrist	7½ „	5½ „

Were we to contemplate this wasted and enfeebled state of the limb alone as produced by the division of a mere *arterial branch* in the axilla, we could not fail to perceive the disparity between an injury so local and so comparatively small, and results so diffused and so truly formidable.

To the quiet condition in which the patient passed the first few hours after the accident, to the careful and steady application of cold, to restraint with regard to stimulants, and to the non-disturbance of the wounded parts during the first three hours after the accident, is, I believe, due the immediate preservation of life; and the very steady, watchful, and intelligent home care and nursing which he had throughout laid the foundation, I feel assured, of the comparatively favourable results which have been accruing as time has advanced.

Withern, Lincolnshire, 1863.

* System of Surgery, vol. i., p. 679.

* See Hodgson on Arteries and Veins. p. 457 et seq.
† Observations and Cases of Gunshot Wounds. By J. G. Guthrie. New Med. and Phys. Journal, vol. iv., p. 269. Quoted by Hodgson, pp. 460-2.
‡ Guthrie on Wounds and Injuries of the Arteries, pp. 10, 11. 1846.
§ Mém. de l'Acad. Roy. des Sciences de l'année 1736. Quoted by Mr. Hodgson.
‖ Ibid, 1736.
¶ Operations in Surgery, third edition; Introduction, p. 2.

CINCHONA BARK FROM INDIA.—At a recent meeting of the Linnæan Society, Mr. Howard exhibited the first specimens of the Cinchona bark sent from India. It was stated that these had been found to yield a per-centage of quinine and the other febrifuge alkaloids fully equal to that furnished by the bark of the same species when grown in South America. As the largest plants in the Neilgherry Hills are in full flower a supply of seed may also be expected.

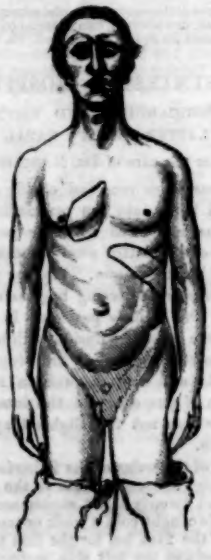
REPORT OF A CASE OF LATERAL TRANSPOSITION OF THE HEART AND LIVER IN A SOLDIER.

BY W. C. MACLEAN, M.D., Dep. Insp.-General;
PROFESSOR OF MILITARY MEDICINE, ARMY MEDICAL SCHOOL.

PRIVATE ISAIAH A——, aged twenty-five; 106th Regt.; service three years and four months. The greater part of this man's brief service was spent in India, where he had been quartered at Bombay, Poonah, and Neemuch. His medical history sheet showed that he had been repeatedly in hospital for intermittent fever. He was admitted into the Royal Victoria Hospital, Netley, on the 20th of May, 1863, with all the physical signs of tubercular deposit in both lungs, and for this disability he was found unfit for further military duty and discharged the service.

During his stay in hospital the following peculiarities in the position of the heart and liver were noticed:—

Percussion in the normal precordial region elicited a sound abnormal in that situation. On further examination, the apex of the heart was observed to strike the thoracic wall on the *right* side between the sixth and seventh ribs, in a line one inch internal to the right nipple. Percussion elicited a dull sound over a space extending from above downwards from the fourth rib to midway between the sixth and seventh ribs, and laterally from the centre of the sternum to a line running one inch internal to the right nipple. The cardiac sounds were quite distinct in the region above defined, and quite normal in rhythm and intensity. There was no empyema on the left side to cause this displacement of the heart. Carrying on the examination, it was discovered that the liver was placed in the *left* hypochondriac and epigastric regions; dulness extended over a space bounded superiorly by the eighth rib, and inferiorly by a line corresponding to the margins of the false ribs on that side. On percussing the right hypochondriac region, tympanitic resonance was elicited; immediately after taking food the percussion note in this region became dull. Notwithstanding the repeated attacks of intermittent fever from which the man had suffered, the spleen was not enlarged, and percussion did not show any change in the position of this organ. The umbilicus was peculiar, its direction being from left to right. The *right* testicle was suspended on a lower level than the left, and the man was left-handed. The accompanying engraving shows the above peculiarities in the disposition of the organs, the dark lines denoting the regions of abnormal dulness.



The patient was himself aware of the irregular position of his heart. Like many delicate soldiers, he was liable to attacks of palpitation at drill, when the free movements of his chest were interfered with by the pressure of his tight tunic and accoutrements; at such times he observed that his "heart beat on his right side," and he had often pointed out the transposition to his comrades. For obvious reasons he never suspected the irregular position of his liver. There is no reason to suppose that this transposition of organs exerted any injurious influence on their functions.

Professor Allen Thomson, in the *Glasgow Medical Journal* for July, 1853, published a notice of the dissection of a case of "Lateral Transposition of the Viscera of the Thorax and Abdomen in a Man." Professor Thomson in this paper shows, from his own observations and those of Professor Von Baer of Konigsberg, that this kind of malformation or transposition admits of a certain amount of elucidation from the consideration of embryological development; and to his paper I refer such of my readers as take an interest in inquiries of this nature.

Royal Victoria Hospital, Netley, July, 1863.

DESCRIPTION OF A LARYNGOSCOPE.

BY FRANCIS MASON, Esq., F.R.C.S. (Exam.),
ASSISTANT-SURGEON TO KING'S COLLEGE HOSPITAL.

THE laryngoscope is becoming so generally adopted by the profession, that no doubt can exist of its value as an important aid in the diagnosis, and, consequently, in the treatment of disease. Notwithstanding what has been written regarding the examination of the vocal cords, epiglottis, and other appendages of the larynx, we have been scantily supplied with descriptions of the various instruments employed, and of the mode of their application.

The laryngoscope being, as its name implies, an arrangement for "looking at the larynx," the simplest apparatus by which this end may be attained is that which will be most readily received by all observers.

The subjoined woodcut represents an instrument made for me by Mr. Matthews, of Portugal-street. It is, in most respects, similar to that described by Dr. George Johnson elsewhere, and which he has done me the favour of showing me. The essential point of difference, however, is that the mirror, instead of working on a hook bent at an angle, is attached to the forehead-pad by means of a ball and socket joint. The universal movement thus afforded enables the surgeon to direct the rays of light with the greatest accuracy, and, by allowing him to assume a posture most easy to himself, to make a prolonged examination without fatigue.

The apparatus consists of a slightly concave mirror, three inches and a half in diameter, having no central aperture. To the centre of the back of this (*a*) is attached an accurately-fitting ball and socket joint (*b*), provided with a screw to tighten the joint, should this proceeding be necessary. A stem, continued from the ball in front, is fixed to the forehead-pad (*c*), and from the extremities of the forehead-pad is fastened an elastic band, which encircles the head. Three or four laryngeal mirrors, varying in size, of the shape (*e*), and set at the angle (*f*), indicated in the engraving, complete the instrument. Each mirror fits the handle (*g*). (Figs. *e*, *f*, *g* are drawn exact size; the forehead mirror is reduced.)

The mode of examining the vocal cords is, in most cases, simple enough, and may be thus briefly described. The patient being seated on a firm chair, a lamp giving a brilliant and steady light is placed on one side of, and a little behind him. The surgeon, sitting opposite, fixes the mirror on the centre of his own forehead, and desiring the patient to advance his head slightly, directs the rays of light through the mouth to the back of the pharynx. The laryngeal mirror, having been previously warmed to prevent its becoming steamed by the breath, is now passed rapidly over the tongue, and made gently to elevate the soft palate. It should be borne in mind that the objects, as seen in the mirror, are reversed from before backwards. The base of the tongue, perhaps, will be first observed; next will be seen the epiglottis; and then, with careful manipulation, assisted by the patient saying the word "Ah!" the vocal apparatus may be demonstrated. In some cases it will be necessary to hold the tongue forward with a towel; this proceeding, however, greatly distresses certain patients, the examination of whose throats may be better made either by depressing the

tongue with a common spatula, or by requesting them to retract and bury this organ, so to speak, in the floor of the mouth. Should the sunlight be employed to illumine the larynx, the laryngeal mirror will, of course, be the only instrument required.

Thanks to the labours of Dr. Gibb much has already been done in this country to prove the value of the laryngoscope in the investigation of the physiological as well as the pathological condition of the air-passages, and much more remains yet to be accomplished. By moderate practice, however, anyone may make himself familiar with the instrument, and by properly-directed treatment in disease, alleviate much suffering and annoyance, which may have lasted for months, or even years.

Conduit-street, Regent-street, July, 1863.

ON A CASE OF PLEURITIC EFFUSION AND LUMBAR ABSCESS COMMUNICATING WITH THE KIDNEY,

IN WHICH THE SPLEEN WAS EXCESSIVELY SMALL.

By PHILIP W. JONES, L.R.C.P. Lond.

SUSAN C——, aged thirty-eight, tall, pasty complexion, with dark hair and eyes, was admitted into the West Riding Aylum, Wakefield, on the 2nd of July, 1862. The week after her admission she was employed in the kitchen, and continued so until the 2nd of September, when, lifting one of the large pan lids, she hurt her back; or, to use her own words, "she sprained her back." She fainted. An hour after the occurrence she was placed in bed, and complained of pain in the left lumbar region; there was great tenderness on pressure, and the lower half of the chest was dull. Ordered to be kept in bed.

Sept. 3rd.—She suffers less pain.

A few days afterwards she became excited, and continued so for three weeks; and, at her request, she went to the laundry, stating she was quite strong again, and was employed, daily, until the 20th of November, when I was informed by the attendant that she had not taken her food so well as usual, which might be accounted for by the diarrhœa which she was then suffering from. With some hesitation she told me she was still suffering from pain in the left side and lumbar region, and that during the last few days it had been worse. The tongue was moist and flabby. She was put to bed, and on examining her chest I found the dulness existing. Close to the eleventh and twelfth vertebræ there was a slight elevation with fluctuation, but not attended with any discoloration of the integument. She was ordered to be kept quiet and placed on extra diet, and the swelling to be painted with compound tincture of iodine. The next day she fancied herself better, but the swelling continued to increase in size until the 2nd of December, when she complained of dyspnœa; it was then deemed advisable to tap it by means of a trocar. Three ounces of ill-conditioned pus was drawn off; she fainted. In the evening her breathing was greatly relieved, and her countenance looked much more cheerful. During the night she was restless, and removed the bandage and plaster which had been put on after the tapping, allowing several ounces more of pus to escape. The following day she refused food, and there was a slight return of diarrhœa; pulse feeble, and great thirst. Ordered brandy and a mixture containing opium; she passed a restless night, and appeared much worse the next morning. This condition gradually increased in severity, and she died during the following night.

Post-mortem examination.—The left side of the chest was filled with fluid of a straw colour, and, in consequence, the lung was compressed. On examining the abdomen a large abscess was found, the walls of which were adherent to the upper part of the left kidney, under surface of the stomach, and descending colon, which extended upwards on the psoas muscle, but beneath the pleura and diaphragm, and outwards between the eleventh and twelfth ribs. On making a section of left kidney, in the upper portion was seen a large cavity containing tubercle and pus, and communicating with the abscess; in the lower portion there was some slight deposit of tubercle. The spleen was excessively small, measuring one inch in length, and weighing only two drachms.

Wakefield, July, 1863.

A Mirror OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum, et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

WESTMINSTER HOSPITAL.

EXTENSIVE PYOPERICARDIUM AND EMPYEMA; TAPPING OF THE LATTER TWICE; FATAL RESULT.

(Under the care of Dr. RADCLIFFE.)

THE following cases are recorded chiefly on account of the effusion of pus and blood into the pericardium. In the first there was empyema associated with the pericardial effusion, but the symptoms of the latter were obscure, and necessarily somewhat masked by the former. The sac was distended to its utmost, and formed a projecting bag the moment the chest was opened, as in Dr. Wilks's patient. It is a curious fact, that in some of these cases of effusion within the pericardium the amount of distress is not at all proportionate to the extent of the fluid; and cases have been recorded wherein as much as a gallon of pus occupied the interior of the membrane, whilst there was not the slightest appearance of impeded cardiac action.

For the abstract of the notes of the following case we are indebted to Mr. Gandy, house-physician to the hospital:—

Thos. B——, aged twenty-eight, stonemason, was admitted Feb. 22nd, 1862. He caught cold a week or ten days previously. On the morning of the 21st he, for the first time, experienced a sharp stabbing pain in the left side, aggravated in intensity

on taking a deep breath, on moving, or on lying on either side. In the evening he had distinct rigors and shiverings, together with nausea, great thirst, loss of appetite, and other febrile symptoms. During the night the pain accompanying inspiration altogether prevented sleep. At the present time the countenance is anxious and pale, the skin hot and perspiring, the breathing chiefly diaphragmatic, and the pain greatly increased by any attempt to take a deep breath. Pulse 140. Decided dulness over the left side of chest, and much pain on percussion over the same region. No friction-sounds audible.

Feb. 23rd.—Had a restless night. Skin hot, perspiring profusely; tongue dry and brownish; expectoration in moderate quantity and rusty; pulse 132, feeble, but regular; respiration 32; cough short. Complains of much pain in the left side, about two inches below left nipple. Bowels acted twice from medicine. Lower portion of left side of chest dull anteriorly, posteriorly, and laterally. Total absence of vocal fremitus over the region of dulness, and also of respiratory sounds except here and there; indistinct tubular breathing; precordial space dull and extended; heart sounds almost inaudible; no murmur or friction-sound audible, nor fremitus over cardiac region; the heart's impulse diminished and perceptible at the inner side of the nipple; cutting pain over the precordial region—a symptom which absorbs the attention of the patient. To have two pints of beef-tea. Ordered bicarbonate and nitrate of potash, every four hours, and four grains of calomel and one of opium every night.

Next day there was some improvement. The urine was acid, and contained nearly the normal amount of chlorides. Heart-sounds more distinct; no friction-sound or valvular murmur audible, and no fremitus.

25th.—Posterior dulness increasing upwards, with some bulging of the intercostal spaces on the left side. There was scarcely a trace of chlorides in the urine on the 27th.

Without giving all the symptoms and the progress of the patient from day to day, we may mention that they varied much. The dulness and intercostal bulging of the left side increased, and in measurement the left was much larger than the right side. The dyspnœa now became urgent, and the left mammary region bulged considerably, with dulness extending to the right margin of the sternum, and total absence of vocal fremitus everywhere but in the lower part of the affected side. He was now taking ten ounces of brandy daily.

On the 8th of March Mr. Hillman operated on the left side of the chest, and drew off two pints of thin pus, with great relief and improvement to all the symptoms.

On the 11th the heart's beat was felt at mid-sternum, and the sounds were heard plainer. He subsequently became worse, the accumulation of fluid increased, and tapping was again performed on the 1st of April, when thirty ounces were drawn off. A similar quantity passed in the evening, and as much the following morning. Although he was easier for a short time, the symptoms again became distressing; he got lower and lower, and finally died on the 9th of April.

Autopsy, twenty-four hours after death.—The pericardium was seen to be enormously thickened and distended with pus—so much so that on puncture the pus spirted up to the ceiling of the room; the quantity must have been nearly two pints and a half, or some fifty fluid ounces. The membrane was adherent to the whole of the posterior surface of the heart, and over the septum ventriculorum in front, so as to leave two pouches, on each side of which the two ventricles respectively appeared. The surface of the heart itself was covered with vegetations, but otherwise the organ was healthy both as to size and condition of the valves. The left pleura was filled with pus, and the membrane much thickened. The lung on this side was bound down to the parietes of the chest, and compressed into about a quarter of its normal size; consolidated in its lower portion, but crepitant in its upper. The right lung and pleura were healthy.

GUY'S HOSPITAL.

EXTENSIVE PYOPERICARDIUM FOLLOWING PLEURO-PNEUMONIA; FATAL RESULT.

(Under the care of Dr. WILKS.)

WILLIAM S——, aged nineteen, was admitted July 8th, 1863. The patient had fallen into the water, when he was brought to the hospital, and was in the accident ward for a week, suffering from pneumonia and great difficulty of breathing. He was then transferred to the clinical ward. A pleuritic rub was heard in the left side, and also some bronchophony, as also subsequently in the right side. There was never, however, sufficient heard in the lungs to account for his great distress, his difficulty of breathing, and his attacks of syncope. The pulse was always small and feeble, sometimes irregular, and soft in character, denoting cardiac trouble. The sounds of the heart were scarcely audible, and at the same time the dulness on percussion was much increased. These symptoms led to the supposition of pericardial effusion. (It was not, however, thought that the sac was full of pus, as found after death.) His chest during the last few days became very prominent in front. He died July 19th.

Autopsy, eighteen hours after death.—On opening the chest a large bag of fluid was seen in front, and pus oozing out. The lower left lobe of the lung was covered with a thick layer of lymph, the lung-structure being rather condensed, with little air. The lower lobe of the right lung was somewhat solidified, as if it had undergone some inflammatory process. The pericardium was immensely distended with pus; two pints (of twenty ounces each) were removed, and an ounce or two were lost. Anteriorly above, the sac was softened as if the pus were attempting to perforate. The heart itself was covered with firm lymph, almost an inch in thickness. The valves, lining membrane, and muscular structure were healthy.

ST. GEORGE'S HOSPITAL.

HÆMATOPERICARDIUM AND COMPLETE FATTY DEGENERATION OF THE HEART; SUDDEN DEATH.

(Under the care of Dr. PAGE.)

BAPTISTE T——, aged sixty-four, admitted January 18th, 1860. On admission he did not appear to be seriously ill. He had been complaining for eleven months of loss of power and pain in both forearms and deltoid muscles. This was not accompanied by any numbness; nor were the lower extremities affected until three weeks ago, when some slight redness and pain appeared above the left knee. There was now pain like that of rheumatism referred to both deltoid muscles, and to the arms and one leg. He took guaiacum, and was treated as is usual with cases of chronic rheumatism. He went on well until the morning of the 28th, when he was sitting up in bed, and talking to the nurse. His conversation was interrupted by his suddenly pitching forward, apparently fainting. He soon partially recovered, and complained of pain across the epigastrium. He was pallid, but was perfectly sensible. He so remained, not knowing he was dying, for a quarter of an hour, when he sank. He had no dyspnœa or distress of any sort. He appeared to die purely of asthenia.

Autopsy, fifty hours after death.—The body was exceedingly fat. The upper part of the spinal cord and the various muscles (deltoid on both sides, pronator teres on left) were examined, and found quite natural. The pericardium contained some bloody fluid. The heart was flabby, and in so extreme a condition of fatty degeneration that nothing resembling a healthy fibre could be found under the microscope. Its valves were healthy. The spleen was large and diffluent. The blood throughout the body was fluid.

HÆMATOPERICARDIUM, THE RESULT OF LACERATION OF THE APEX OF THE HEART FROM INJURY.

Clara B——, aged four years and a half, was run over by a forage cart on the afternoon of the 22nd December, 1862, and was brought immediately to St. George's Hospital, but had expired previous to admission.

On a post-mortem examination forty-eight hours afterwards, the body was found to be that of a healthy child, without any wound or bruise about the body. Both lungs were healthy. On opening the pericardium, it was found distended with fluid blood. The apex of the heart was torn across, opening both ventricles.

ROYAL LONDON OPHTHALMIC HOSPITAL.

PUNCTURED WOUND AT THE EDGE OF THE CORNEA BY AN ARROW; LARGE PROLAPSE OF THE IRIS; TREATMENT; RECOVERY.

(Under the care of Mr. BOWMAN and Mr. LAWSON.)

LOUISA B——, aged five, was brought to the Ophthalmic Hospital on account of an injury she had received in her right

eye the day previous. Her brother, playing with a bow and arrow, shot an arrow into her right eye. It penetrated the globe at the inner margin of the cornea, close to its junction with the sclerotic, and stuck in the eye. It was withdrawn by the child, and immediately an extensive prolapse of the iris took place. When first seen, there was a wound about one-eighth of an inch in length at the site above mentioned, and through it was protruding a large portion of iris, nearly one-sixth of its entire circumference. The point of the arrow appears to have simply passed into the anterior chamber, and not to have touched the lens or otherwise to have disturbed the parts within the eye. The lens, as far as could then be made out, was quite clear, and the sight was good. With the exception of the large bulging portion of iris, the eye looked very much as if an iridectomy had been performed. Some recent lymph coated the protruding portion of iris.

The question now was, what treatment in such a case was best to be pursued? The portion was too large to admit of a ligature being placed round it, as in iridesis; for the wound—and that a somewhat gaping one—still remained, and if the bulging part was diminished in size, fresh iris would probably prolapse. For the same reason cutting it off with scissors was inadvisable; for the large wound would still remain, and another bulge certainly take place.

Mr. Bowman saw the child, and punctured with a fine needle the protruded iris at four or five points, allowing a little of the aqueous which swelled it to escape, so as to cause it to collapse, and at the same time, perhaps, to favour a certain amount of adhesive inflammation. This treatment he recommended to be repeated once or twice a week, according to the condition of the eye.

The child was brought to the hospital regularly twice a week for about a month, and on each occasion Mr. Lawson repeated the punctures. They produced but little annoyance, the slight action which followed each operation being limited to the prolapsed iris and the wound. The case progressed uninterruptedly: the wound closed, the bulging portion of iris became strangulated, a firm cicatrix resulted, and the child has a good and useful eye.

ST. BARTHOLOMEW'S HOSPITAL.

PROGRESS OF THE CASE OF INJURY TO THE FACE, IN WHICH AN OPERATION WAS ATTEMPTED FOR THE REMOVAL OF THE UPPER JAW.

(Under the care of Mr. LAWRENCE.)

THE continuation of this case, reported in our last, is as follows:—

Aug. 1st.—The girl has been up for the last few days, the inflammation having somewhat subsided. The cheek, however, is still much bagged, and a good deal of pus comes away. The upper portion of the flap beneath the eye is pink and œdematous, forming longitudinal folds, and somewhat resembles the œdematous inflammation of the eyelids associated with chemosis. The cicatrix of the wound made at the operation does not extend through the mesian line of the lip; nevertheless, the deformity is still very great.

4th.—The redness has diminished; the suppuration has ceased; the fistulous openings are closing; the cheek is less bagged; and the patient expresses herself as much better, and goes about the ward quite actively. She is approaching convalescence.

ROYAL FREE HOSPITAL.

CASE OF LITHOTOMY, THE URINE PASSING THROUGH THE URETHRA DURING THE FIRST TWENTY-FOUR HOURS; RECOVERY.

(Under the care of Mr. GANT.)

WE have been furnished with the following notes by Mr. John Foster, house-surgeon to the hospital.

Thomas T——, aged five years, was admitted on the 1st of June, 1863, suffering from the usual symptoms of stone in the bladder. On his admittance he was sounded, and a calculus was discovered. On the 6th of June, the patient being under the influence of chloroform, the stone was removed by the lateral operation. Its size was that of a bean; its composition, urate of ammonia. The urine passed during the first twenty-four hours entirely through the urethra. The external wound having united, and it being feared that the wound in the bladder might not have closed, the finger was introduced through the former, but not into the bladder, and urine immediately escaped through the opening, and continued to do so until the thirteenth day after the operation, when it passed entirely through the urethra. The boy has now perfectly recovered.

FARRINGDON DISPENSARY.

A CASE OF EHOPALISMUS, WITHOUT ANY DEFINITE CAUSE, SUCCESSFULLY TREATED.

(Under the care of Mr. R. W. DUNN.)

W. L——, aged forty-eight, a shoemaker, of temperate habits; has always had pretty good health; has suffered twice from inflammation of the bowels. He is ruptured, and has hydrocele. He applied to the dispensary on the 4th of June, 1863.

On Monday, the 1st of June, he got out of bed an hour before his usual time to pass urine. He returned to bed, and when he got up to dress he found his penis was quite erect, and had some difficulty in micturition. The penis was painful to the touch. The erection not subsiding, he applied at an hospital, and not receiving any relief he came to the dispensary.

The patient has a large hydrocele of the left testicle; his penis is quite erect, and in contact with the abdominal muscles; it is very painful to the touch; has great pain when he voids urine. He complains also of intense pain in the hydrocele.

Mr. Dunn tapped the hydrocele, and drew off twenty-six ounces of fluid, which gave relief, and he was in hopes that the erection of the penis would subside. As the patient felt weak, and his bowels were not opened, he was ordered a cathartic mixture, and ten drops of the muriated tincture of iron three times a day.

June 11th.—Is no better; the penis still quite erect, and painful. He was ordered cold lotions to be applied constantly, and five-grain doses of iodide of potassium every four hours.

17th.—No better. Ordered, three leeches to the penis just above the scrotum, and a suppository of fifteen grains of compound soap-pill at bedtime, and to keep the bowels freely open.

18th.—Much better. To repeat the suppository, and apply cold lotions.

24th.—Much better; can bear the penis to be handled. It is now semi-erect.

July 2nd.—Much better in every respect.

9th.—Has returned to work, and says he is quite well.

The above case is fraught with a certain amount of interest, as there appears to have been no exciting cause, mental, physical, or otherwise, to account for the abnormal condition.

Reviews and Notices of Books.

The Causes and Treatment of Imperfect Digestion. By ARTHUR LEARED, M.D., M.R.I.A., &c. Third Edition. pp. 222. London: Churchill.

WE are glad to find the public has so well appreciated Dr. Leared's little treatise as to warrant the issue of a third edition. It now constitutes about the best work of its scope on the subject that we can remember. The present edition has been carefully revised, and though numerous additions have been made, condensation has been kept steadily in view by the writer. The chapter on the Treatment of Dyspepsia by Diet has been with advantage considerably extended. We quite accord with Dr. Leared in the following observations:—"A great fault in the dietetic system of this country consists in the fact that most people are supported mainly by dinner. This meal is consequently too large, and from this unsuspected cause much dyspeptic suffering results.....Patients persist in saying, 'I can never eat breakfast.' The fact is, the habit of eating largely at dinner has so grown upon them that they are virtually supported by that single meal, and have no appetite for substantial food at any other time. Let the quantity at dinner be resolutely diminished, and breakfast will soon be appreciated."—p. 150.

This little book on a great subject is well worth attentive reading both by the profession and the public.

The Journal of Botany, British and Foreign. Edited by BERTHOLD LEEMANN, Ph. D., F.L.S., &c. January to July, 1863. London: Hardwicke.

AMONGST the numerous periodicals published in this country, there has not hitherto been one exclusively devoted to botany in all its bearings, and those not having the opportunity of attending the Societies have thus been unable to exchange opinions. Perceiving such a want, the present journal has been projected by the editor, a well-known botanist and traveller. It is to consist of two distinct sections, the one to be devoted to general botany, the other to the botany of the British Isles. In both, original papers on subjects new to botanical science are to be given, and, when necessary, illustrated, either in the text or by special plates. Mere details of excursions either in well-known or but little-known countries, with records of collecting already familiar plants, are to be excluded, unless there be evidently some useful addition to knowledge contained in them. From the specimens before us of the new serial we may draw a hopeful augury.

On the Diseases of the Heart and Great Vessels: their Pathology, Physical Diagnosis, Symptoms, and Treatment. By HENRY WILLIAM FULLER, M.D., Physician to St. George's Hospital, &c. pp. 247. London: Churchill.

A FEW months since we reviewed, in terms of commendation, Dr. Fuller's systematic work on Diseases of the Chest. Some of the author's professional friends urged him to publish in a separate form those portions of the work alluded to which relate to Diseases of the Heart and Great Vessels. Encouraged by their advice he determined to do so, and hence we have a separate volume, which may be acceptable to those who do not require to refer to much that is contained in the larger treatise. It is scarcely necessary that we should here repeat our opinion of the highly practical value of Dr. Fuller's writings.

On the Diseases, Injuries, and Malformations of the Rectum and Anus; with Remarks on Habitual Constipation. By T. J. ASHTON, formerly Surgeon to the Blenheim Dispensary, &c. Fourth Edition. pp. 403. London: Churchill and Sons.

NOTHING can more forcibly express the value attached by the profession to Mr. Ashton's book than the fact of its having reached a fourth edition within a few years. This edition has been carefully revised, and many portions rewritten, with the addition of further observations and several cases of malformations of the rectum successfully treated. The pathological characters of the several varieties of hæmorrhoidal tumours are more fully detailed, with special reference to the most appropriate plan of treatment, whether by incision, excision, ligature, nitric acid or other escharotic. The two different conditions under which prolapsus recti occurs are described: the one depending on derangement of the muscular apparatus supporting the intestine; the other on changes in the gut itself and the consequent necessity of variety in treatment. The mode of formation of the internal opening in fistula in ano, its situation, and the practical deductions in respect to treatment are also discussed. Such are some of the points of difference between the present and former editions. We have only to reiterate our good opinion of this work, and to recommend it to the notice of the profession.

Catalogue of the Pathological Preparations in the Museum of Guy's Hospital. Revised and Edited by SAMUEL WILKS, M.D., Assistant-Physician to the Hospital, &c. 2 vols. 8vo. London: Mackenzie.

WE learn from the preface that it is more than thirty years since the Museum of Guy's Hospital was first formed, and since Dr. Hodgkin published his descriptive catalogue of the preparations. During that period the collection has increased fourfold, necessitating an enlarged and revised catalogue in accordance with the advances made in pathological science. This has been the work of Dr. Wilks and Dr. Habershon, the latter revising the portions referring to the respiratory and digestive systems. Every old preparation has been submitted to a fresh examination, so that its correct nature might be determined in harmony with modern views.

As a great pathological collection, the Guy's Museum stands unrivalled, and its value is enhanced by the circumstance that no effort has been spared to make it as complete as possible, and therefore most excellent as a whole.

In looking through these useful volumes, we are at once struck by the labour and zeal devoted to their preparation, and the admirable classification of the various specimens. They are indispensable to the working pathologist.

The Popular Science Review. A Quarterly Miscellany of Entertaining and Instructive Articles on Scientific Subjects. Edited by JAMES SAMUELSON. No. VIII. July, 1863. London: Hardwicke.

WITH this number the second volume is completed, and with it also the present editor's connexion ceases. The *Review* will in future be conducted by Dr. Lawson, the Professor of Physiology at Queen's College, Birmingham. In the forthcoming issue an entirely new department is to be opened.

"As soon as the results of skill and abstract theory take a definite form, the inventor usually applies for a patent to secure to himself the rewards of his labours. The *Popular Science Review* will every quarter give a summary of such patents as are of general interest. Where needful, descriptions will be given; and, if thought advisable, drawings of any mechanical contrivances will be added. A complete summary of all the English, American, French, and German works of the quarter will be given. Instead of being a mere list of titles, each work will be treated in such a manner that the reader will be enabled to form a judgment as to its scope and merits."

The retiring editor has deserved much praise for the able and judicious manner in which the journal has been hitherto conducted. His farewell number is perhaps the most interesting of any portion that has appeared. The articles on the Antiquity of Man by Mr. Leifchild, on Colour Blindness by Mr. Jabez Hogg, and the review of the "Ape origin of Man and the New Philosophy," may be specially recommended to the perusal of members of our profession.

Contributions to Dental Pathology. By ROBERT THOS. HULME, M.R.C.S., F.L.S. 8vo, pp. 76. London: Baillière. 1862.

THESE contributions consist of an article on Calcification of the Dental Pulp, and three lectures on Diseases of the Dental Periosteum, illustrated by several well-executed plates. The author deserves great credit for his researches, which should be studied by members of the dental profession.

The Form of the Horse as it lies open to the inspection of the Ordinary Observer. By JAMES C. L. CARSON, M.D. Second Edition. pp. 158. London: Simpkin, Marshall, and Co. 1862.

DR. CARSON'S little work would appear to have won considerable respect from the horse-buying public. The series of "Letters on the Horse" originally published fifteen years ago in the *Londonderry Standard* have now become an authoritative text-book of useful information upon a topic concerning which a vast number of people are more or less interested. The present edition is enlarged and improved, and may be well recommended, as illustrating in a manner perfectly intelligible to every class of the community a very intricate and treacherous subject.

PROSECUTION FOR HERESY IN A SURGICAL THESIS.—The Assize Court of Cagliari has recently condemned a physician to three months' imprisonment, and a fine of 500 francs, for some "heretical" propositions on the wounds and death of Christ developed in his Surgical Thesis.

THE LANCET.

LONDON: SATURDAY, AUGUST 8, 1863.

IT is worth while, when reading the details of such a trial as that of WILLIAM ROUPELL, to inquire into the mental condition of an individual who lives under perpetual fear of discovery; whose past must be a series of reminiscences terrible to reflect upon; whose future can only present contemplations fearful to anticipate. What is the feeling influencing his present? Surely it will be said, there must, in the enjoyment of his passing hours, be such a whirl of happiness as to drown, as it were, in a vortex of pleasure every dread of possible suffering which its indulgence may entail! It must be that he who deliberately selects evil as his good, in sacrificing earthly peace and future happiness, has at least his current moments free from care! When laying all feelings of honesty and honour on the altar of Moloch, does he not make some stipulation for the secure enjoyment of the price of his perdition? Experience says it is not so. There is, after all, but little romance in crime. True it is that wrong may for a season be successful. True it is that overreaching cunning may for a time be exultant. But as sure as crime and as certainly as wrong do both prevail, so surely and so certainly does a day of reckoning arrive, when the voice of Justice demands to be heard, and the supremacy of the Law will no longer be defied.

Since the suicide of JOHN SADLIER, M.P., no frauds of a similar character equal either in profundity or immensity have been perpetrated as those which the proceedings in Chelmsford disclose on the part of WILLIAM ROUPELL, M.P. He may perhaps, accord'ng to the opinion of impartial judges, in the matter of abstract knavery claim pre-eminence over his brother senator. One, of a bold and daring spirit, started with an honest resolve. His intellect commanded respect. Energetic and earnest, he entered on an untried career. Led by the pernicious genius of speculation, he ventured into the treacherous waters of enterprise far beyond his depth. With the desperate hope of retrieval he entered on the path of crime, and there found, as usual, destruction. The other, "to save a friend," commenced as a petty knave; he lent nothing to the position he acquired by extravagant outlay, and his position reflected nothing upon him. One in the agony of his despair reveals his infamy, declares his ruin of many, and pays with his life the self-imposed penalty of his wrong. He shrinks from the contemplation of the crime he has committed and the wretchedness he has created. The other returns to the scene of his labours, proclaims his to have been a life of comparative purity, boasts his avoidance of personal extravagance, and affirms his abhorrence of grossness or excess, while seeking, not to lighten, but to transfer the burden of his guilt. Far be it from us, in thus comparing the misdeeds of men of a somewhat similar status, to do other than rejoice that WILLIAM ROUPELL still lives to make future atonement for his sin. He stands before the world self-accused of terrible misdeeds. We desire neither to exaggerate their enormity nor to aggravate his misery; but when we contrast the criminal and suicide of 1856 with the convict and penitent of 1863, the inquiry arises—Whom of the two will posterity most leniently judge? One, in a complication of embarrassments embracing commercial adventures of every kind, whistled principle to the winds as speculation pointed to cent. per cent., and possible redemption. He knew not where his wickedness might strike; his crime was broad-cast on the world. When detection became inevitable, he concealed nothing of his outlay, and avoided nothing of his shame. The other perpetrates a series of self-induced, cunning, deliberate schemes. He calculates well who his victims are; he heaps iniquities one upon the other, and then looks calmly on the ruin he has wrought. JOHN SADLIER in a series of years expended in immense speculations less actual money than WILLIAM ROUPELL in the short period of his career. We desire not to question the feeling and eloquent suggestions of Mr. Serjeant SHEE, or to deny that repentance complete and sincere has affected the convict's breast; but then a question arises—What proof of such appears? On WM. ROUPELL'S own showing, he stands proclaimed either an accomplice or a victim. He declares the money has been spent and not in excess. If an accomplice, that repentance is incomplete which shelters the guilty; if a dupe, that remorse is imperfect which conceals a criminal. Let there be no sentiment on this matter. Let truth be spoken honestly and outright. Before WILLIAM ROUPELL'S crime becomes numbered with the heroic it must be divested of the selfish; and at least let those on whom the obligation of his grievous wrongs will eventually rest know the channels into which his ill-gotten wealth has been diverted, or the individuals to whom it has been given. Then, indeed, it may be urged that his repentance is complete. More than this he cannot be expected to avow, and with less than this a sincere contrition would not accord.

SADLIER and ROUPELL constitute two of the greatest malefactors who have occupied the sensation stage. Foremost amongst the less notorious we may place REDPATH. His was a character which seemed to have formed for itself a *morale;* to have preyed like a beast of power on some mighty store, and to have scattered the results of his depredation for the benefit of his kind. Described as hospitable and generous, charitable and ever willing to hear and assist those in distress—a connoisseur in art, a critic in literature, a patron of the drama, and, in other respects, "a most worthy and excellent man"—his life was yet a living lie. Surrounded by his guests his eye ever beheld a finger writing on the wall. He looked above, and there saw the sword of the law suspended by a hair; he looked before, and in the vista perceived Justice frowning her reproof, while louder than the merry laugh Conscience whispered "Beware!" The career of ROBSON had little to remove it from the category of vulgar crime. Low sensuality seems to have been its inducement: quick and condign punishment its end. Of PULLINGER more may be said. In the magnitude of his frauds he rivals the others; in his expenditure he stands alone. Weary watching day by day and hour by hour must have been almost the sole result of his depredations. There was no evidence on his trial to show that the robber of a quarter of a million had increased his personal comforts by the outlay of a "pin's fee;" and yet silently and stealthily the money glided away. It is ever thus when crime assumes a mastery; and it is well that it is ever thus. *Cui bono* such moralizing? It is desirable that these lessons be not forgotten; now especially, when the vices of the age are reckless speculation

and rash adventure; now, when commerce is bedizened in harlequin attire, and "limited liability" walks arm-in-arm with public credit, and holds her head high on 'change; now, when quick wits woo Fortune with success to settle down on permanent alimony—as steady merchandize is abandoned for perilous traffic, it is well to remember that when the suggestions of cunning are exhausted the resources of crime will not avail.

Consequent on this condition of affairs, and the perpetual mental excitement which exists amongst all those involved in such transactions, the records of the past few years exhibit an increase of insanity and a number of suicides directly due to overstraining of mind or disappointment of hope. Medical men are daily consulted in reference to anomalous affections of the nervous system traceable to the excessive and continuous strain kept upon the cerebral functions in the efforts made to obtain a respectable social and professional position. All physical exercise and bodily care seems to be rendered subservient to the one purpose of making money, which comes with wasted energy and broken strength. What is the remedy for such a state of things? This is a question of the deepest importance. Its answer we believe to involve a material revolution in our present social and commercial system, and a return to that sober adventure of our forefathers which has made and preserved this country great.

WHEN inquiring into the influence of railway travelling on public health, we drew attention to the fact that a certain amount of detriment did ensue to some persons from the heat, closeness, and deterioration of the air inside the carriages when the latter are crowded in warm weather. We referred also, in confirmation of the evil, to the direct experiments of Dr. ANGUS SMITH, which went to show that, whilst of the pure air of All Saints, Manchester, 72,000 cubic inches were required to decompose a given solution of permanganate, only 8000 of that of a closely-packed railway carriage were necessary, corresponding exactly in amount to that required when the strong smell of a sewer entered the investigator's laboratory. When the temperature of the air rises, all surfaces upon which effete organic matters rest become offensive, and persons and animals give off odours not perceptible before, just in the same way as our own bedrooms will smell unpleasantly or closely if we return to them after early rising on a summer's morning. We can readily detect the deterioration of air in a railway carriage in close weather for a considerable length of time after the inmates have left, particularly if the carriage has been crowded.

Now if such be the case in this country, what must it be in the East? Railway travelling is becoming more frequent in India, and we daily hear of instances in which certain injurious effects are associated with this peculiar mode of progression in that country. We may particularly refer to a recent statement by a writer in the *Delhi Gazette*. Writing from Lucknow on the 18th of May, he says:—

"My presence being required urgently at Lucknow, I left Allahabad by the four P.M. mail train on Tuesday, the 12th inst. It is simply impossible for me to describe the roasting one gets in the railway carriages between the hours of four and six P.M. I know that two children of the ages of two or three, who were travelling in the same second-class carriage as myself, were struck down with fever, to the distress of their poor mothers. It is running a most serious risk to travel by railway in this weather, and I feel surprised that no ingenious individual has yet taken out a patent for cooling the carriages. I think some discussion took place in your columns last year; it would indeed be well if this were revived, provided the result so much to be desired could be attained. ..... By two P.M. on the 13th I reached the house of a friend at Lucknow, and was thankful to find that I had not come in for an attack of brain fever. This contingency was only avoided by my having a wet towel on my head during the hot and sultry hours of the day. ..... I lived at Lucknow some time back for several years consecutively, but I have never experienced such intolerable heat as that which is at present killing us."

How many have felt as if half stewed and suffocated when sitting in a well-filled saloon carriage on a summer's morning waiting for the train to start! They can form some slight notion what the sensation must be when our friend at Allahabad anticipated his trip to Lucknow. Dr. WALLER LEWIS informed us on a previous occasion, that he had found carriages built with double roofs have the effect of moderating the excessive heat in summer. The manager of the Bristol and Exeter Railway Company placed, indeed, at his disposal a carriage so constructed during some official journeys made three or four years ago. Dr. LEWIS was much pleased with the increased comfort caused by the false roof, as, in addition to the improvement of the temperature, it appeared to lessen in some degree the great noise produced by the motion of the train, particularly while passing through tunnels. These double roofs should have, we may add, cellular intervals, and they should be provided to all carriages, as not only would the temperature be lowered in summer, but the intense cold of winter nights in this country would be likewise diminished.

Whilst engineering is advancing in some parts of India, medicine and medical education are prospering in other parts. At Jeypore (Rajpootana), besides one or two dispensaries, a small hospital has been established, having accommodation for thirty-six patients, and the wards of which are stated to be well ventilated. There is likewise an incipient medical school, with lecturers on anatomy and medicine, and twenty native students. A small museum is in course of formation, and a large number of preparations are being sent to it from England and Paris. Dr. BURR, to whose vigour so much is due for these advantages, gives clinical lectures in the vernacular to the native students. There is also a lying-in hospital, where a number of middle-aged respectable native women study for becoming midwives. Vaccination has likewise been established. While under Dr. BURR's personal superintendence it met with marked success, people coming from long distances to be vaccinated by him; but during his absence in England the practice of vaccination became excessively indolent, and consequently the returns fell off very much. It is hoped, however, that now upon his return, and during the cold season, vaccination will become as popular as before. The Maharajah and his Prime Minister are stated to take much interest in the progress of this new Indian school of medicine, and to support it in every possible way.

THERE is a physiological aspect of the recent Parliamentary inquiry on the present state of Prison Discipline in County and Borough Jails which is of very considerable importance. The subjects of the existing diversity in the discipline, the irreconcileable disagreements in the dietaries, the absence of any recognisable principle upon which they have been founded, the

evident excess of food in some and defect in other scales, the difference in the punishments, and the absence of any relation between the effects of various punishments upon the body and the dietaries provided, were submitted to careful investigation by the examination of many witnesses, but more particularly of Dr. GUY and Dr. EDWARD SMITH. Dr. SMITH'S evidence included the long-extended experimental inquiries which he has made on the part of the British Association and otherwise on the exact influence of each prison punishment upon the body, and his investigations into numerous questions of dietary. Dr. GUY adduced his experience as medical officer of Millbank Penitentiary, the observations recorded by Dr. BALY on the value of the potato as a preventive of scurvy, and certain dietary tables. The Committee was manifestly desirous to obtain well-founded tables of dietary in which meat should be reduced to a minimum; but Dr. SMITH asserted that in the present state of knowledge it was impossible to prepare such tables which could be regarded as universally acceptable and as finally settling the question. He affirmed that as a first question it must be ascertained by experiment what is the true effect of seclusion over the digestion and assimilation of food; whether meat may be partly or wholly supplanted by other nitrogenous but cheaper food; and whether fat is necessary in a dietary where starch is abundantly supplied. He further explained the nature of the suggested inquiry to be the determination of the degree of assimilation of the ordinary food of a farm labourer by the amount of nitrogen passing off by the fæces, on the basis of his previous researches, which have shown that the weight of the fæces in farmers is twice that observed in ordinary life; and that as the quantity of food eaten by the farmers is not greater than that under the circumstances last referred to, a large proportion of it remains unused, and is wasted by the bowels.

Dr. SMITH also propounded a principle which is very worthy of attention. It is this: Food is assimilable, other things being equal, in proportion to the vital stimulus acting in its transformation. This vital stimulus may be given to the body either by the nitrogen which is contained in the food or by the temperature of the season and bodily exertion; as is proved by the facts that with inactivity of body food of an animal nature is more needed, whilst with cold weather and exertion the desire for food and the consumption of food are greater. Hence exertion, whilst increasing the requirement for food, enables the body to digest and assimilate farinaceous and the less nitrogenized foods, and so far may be regarded as rendering the administration of so large a quantity of nitrogen unnecessary. In fact, he would compel the digestion of bread and the cheaper foods by a proper amount of exertion rather than by an increase in the nitrogenized and dearer foods. The principle is one admitted in ordinary life; for the labourer can eat his crust and drink his water with relish and keep in health upon it, whilst the idle man needs savoury dishes, nitrogenous foods, and perhaps alcoholic stimulants to give appetite to digestion. Dr. SMITH would make such an amount of exertion a normal part of every sentence as shall ensure the digestion of the cheaper foods, and increase the dietary with the further increase of exertion which the punishments to be selected should be proved on experiment to demand. He was of opinion that the treadwheel could be regulated as to be of uniform action everywhere, and that in the course of two years sufficient experimental work could be done to ensure uniformity of punishment and dietary everywhere, and a proper adjustment of them to the wants of the system without causing waste or calling for expensive foods. This view has been accepted by the Committee, and one of the most important results of the inquiry is the recommendation that a Commission be appointed to make the requisite experiments, and with power to determine finally all the questions now demanding attention.

Medical Annotations.

"Ne quid nimis."

THE FOUNDATION OF A GOOD WORK.

WHEN the proposal was first made to erect at Guildford a general hospital for the county of Surrey, the project was at once warmly taken up by all who knew from practical experience the great necessity for such an institution in such a position. In recommending the earnest prosecution of the undertaking, we took occasion to point out its excellence, and the great deficiency of proper hospital accommodation in the large and wealthy county of Surrey. For the rural population, very numerous, very widely scattered, and very liable, on account of the high cultivation of the land, to injuries from steam machinery &c., had no accessible resort in case of sickness or accident; whilst the two large hospitals of Guy and St. Thomas were actually within a stone's throw of each other, and were only intended originally to minister to the exigencies of the poor of Southwark. The removal of St. Thomas's, and the erection of a country hospital at Guildford, were determined on about the same time. When both arrangements are carried out it will prove very advantageous to the poor of Surrey, by distributing the accommodation for the sick in accordance with the local requirements of the population. But it is a relief to turn from the endless bickerings and blunderings which have characterized the proceedings of the authorities of St. Thomas's Hospital, who possess more money than they know what to do with, and trace the Christian unanimity in good work and earnest sympathy with the sick poor which have marked the efforts of the promoters of the new hospital at Guildford. They had to collect every shilling by appealing to the charitable. When they had so gathered some £8000, they wisely determined to at once proceed with the work; although some £4000 was still required to make up the sum necessary for the erection of the hospital. And so, with fitting pomp and ceremony, the foundation stone was laid at Guildford last week, and we trust that there were present some members of that precious "Grand Committee" of St. Thomas's, and that some part of the £800 contributed during the ceremony was given as conscience money in extenuation of the great wrong which their self-conceit and negligence of duty have inflicted on the poor of the south of London.

We have already mentioned the chief characteristics of the hospital about to be erected at Guildford. The most earnest endeavour has been made to combine the latest improvements in hospital construction, and very many of the arrangements are equally novel and excellent. It is a point yet to be decided, whether very large wards, each containing twenty-two beds, and ventilated by windows on both sides, are as suitable for a civil hospital in a rural district as they have undoubtedly proved for military purposes.

It was towards the end of the year 1861 that it was first determined to make a strenuous effort for the establishment of an hospital at Guildford, and about the time when there fell upon the nation the heavy loss sustained in the death of the Prince Consort. So it was resolved that the institution should be as a local memorial for the town of Guildford of the veneration and dear remembrance entertained by all for the illustrious and beloved Prince. This decision was commendable,

in so far that such a memorial was more in consonance with his noble character and useful life than any mere pile of masonry or marble, whether pillar, tower, or statue, such as elsewhere has been erected. English people arrange and support charitable institutions in a way that strikes foreigners with astonishment and admiration. But our attempts at ornamental or artistic memorials certainly elicit little admiration, however much they may astonish.

No site could have been chosen more suitable than that selected for the new hospital, both as regards accessibility and purity of air. For the building is to be erected within two hundred yards of the junction railway station at Guildford, where lines from different parts of the country converge. The position of the building is on the crupper, as it were, of the "Hog's Back"—that long hill which stretches from Guildford to Farnham, and is so well known to every lover of beautiful scenery. As the Earl of Onslow presented an acre of ground, it was wisely determined that the building should stand on this bit of freehold; the out-buildings, exercising grounds, &c., occupying land held by lease.

It was quite an event for the steady dull old town of Guildford when the foundation stone was laid on Friday, the 31st of July, in the presence of a large concourse numbering nearly two thousand persons. The clergy of the district mustered strong, and indeed have throughout divided with the local medical practitioners the onerous work of obtaining contributions and establishing the hospital. Especial tribute is due to the indefatigable zeal and skilful management of the honorary secretary, the Rev. C. Dallas, Rector of Farncombe.

The building &c. is to cost £14,000, and is intended to accommodate fifty-eight patients at the outset; but the domestic arrangements have been contrived so as to be available for a larger number as additional wards are added. The hospital will consist of two large wards (each 92+25 ft.) on the first floor, and six small wards for patients after operation, &c. As yet only £9000 has been subscribed or promised conditionally; but £1200 has been obtained within the last three weeks. We can hardly suppose that at this busy harvest time any decent farmer in the county of Surrey would refrain from sending in his contribution towards a charity of which he must daily see the need amongst his own workpeople. It is as much an insurance as if he took out a policy for his ricks; and one much more satisfactory to think about when making up other and much more important accounts than those which involve merely pounds, shillings, and pence. Indeed it has hitherto been a reproach to a county so rich and populous as Surrey that no general hospital existed for the poor who make it populous, and, being populous, enable it to be rich. Now that the good work has been so well begun, it will be a lasting disgrace if it be stayed for want of funds. The wealthy man who holds his wealth on the tenure only of his own life will do well to take stock of his own deservings and of the necessities of others, and consider the meaning of the text engraved on the foundation stone laid at the base of the Surrey County Hospital—"Blessed be the man that provideth for the sick and needy: the Lord shall deliver him in the time of trouble."

THE COAGULATION OF THE BLOOD.

THERE is no subject which has been more fruitful in honour to British physiologists and surgeons than the study of the functions and changes of the blood and bloodvessels in health and disease. The main contributions to that knowledge which the world possesses on this subject have been made by our countrymen. Since the day when Harvey immortalized his name by his researches on the circulation we have learned much that was unknown to that great discoverer: they are chiefly British names that adorn the roll. Hunter, Hewson, Scudamore, Gulliver, Quekett, Paget, Richardson, Bennett, and Lister, these are the men who have done much to explain the secrets of the constitution and vital qualities of the blood: Hunter, Hodgson, Cooper, Travers, Hutton, Bellingham, are names attached to those great successive advances in the surgery of the bloodvessels which have made that department of surgery remarkable in the professional history of this century. Hence great interest surrounds the subject of Professor Lister's recent Croonian Lecture before the Royal Society, which, by the consent of the lecturer and through the kind courtesy of the Secretary of the Society, we are able to place before our readers to-day. There is no question in physiology at the present time of greater importance than the determination of the cause of the coagulation of the blood. It has always been a problem of great attraction to physiologists. It is unnecessary for us here to recite theories which have held possession of the schools, based chiefly on the conclusion of John Hunter that "coagulation is an operation of life" due to the organization of its fibrin. Until the labours of Dr. Richardson it was felt that our knowledge was excessively deficient as to the changes which took place in the blood when coagulating, and their efficient cause. His researches brought out prominently and confidently a definite result—the evolution of ammonia: and to this he ascribed, with great clearness, the phenomenon of coagulation. This ammonia theory was supported by so many ingeniously-devised experiments, and, moreover, squared so well with the majority of observed phenomena in the coagulation of the blood, that it was eminently satisfactory to the minds of those who read the essay, and who rested content with its statements and conclusions. Since its publication, however, some competent observers have renewed their investigations, and directed especial attention to the ammonia theory. Amongst these counts Mr. Lister, one of the most acute and competent physiologists of the day, and especially known for his researches on inflammatory and other changes in the blood. The results at which Mr. Lister has arrived are, it should be observed, singularly opposed to the conclusions which Dr. Richardson has put forth as the fruit of his labours. Dr. Richardson, for instance, taught that blood shed into a vessel coagulated by virtue of throwing off its ammonia, and that the more rapid coagulation on agitation was in consequence of the more rapid loss of ammonia. Mr. Lister finds that agitation of the blood within its vessels, and without loss of ammonia, produces identical effects. Dr. Richardson attributed the acceleration of the coagulation of blood under heat to the volatilization of ammonia, and its retardation by cold to the imprisonment of that volatile alkali. Mr. Lister finds heat and cold produce those relative effects equally when means are taken to place the blood in an ammonia bath.

The lecture of Professor Lister presents, in short, a series of experiments and conclusions totally adverse to the theory which Dr. Richardson propounded on the strength of his laborious research, and supports a physical explanation of the phenomena. The oration is one which must command attention by its singular lucidity and the logical power with which many most ingenious and delicate experiments have been employed to furnish materials for a continuous argument which seems to carry conviction. Dr. Richardson may find replies to the objections of Professor Lister; but the value of the investigation must in any case be very great, for it produces irrefragable evidence of physical relations of the blood which are of the highest importance to the pathology of inflammation, the formation of emboli and clots, and which will form the basis for advance in blood-physiology and pathology.

BREATHING NOT LIVING.

THE difficulty of procuring conviction for infanticide, under the present ruling of the judges as to the necessity of proving that the violence which has destroyed the child was applied after separation, was very clearly shown this week in the case of Jane Byers, tried before Mr. Justice Blackburn. The body was found apparently about three weeks after delivery. Round

the neck of the child was tied tightly in a knot behind the sleeves of a child's gown—so tightly as almost to sever the head from the body; and if the child had been alive, this must have suffocated it. A post-mortem examination of the body elicited that the lungs floated in water, were florid and crepitated on the touch, from which signs the medical man examined came to the conclusion that the child had been alive and had respired. The body of the child was found to be wrapped up in various pieces of old clothes, some of which were spoken to as having been in her father's house. It was elicited on the cross-examination of Dr. Johnson, the medical man called, that the floating of the lungs was no certain test of the child having lived. Putrefaction might have evolved gases which might have partially inflated the lungs; from this cause they would float, and might crepitate, although the child had been born dead. He did not think that air thus admitted to the lungs would give them the florid colour which they derived from inspiration. But inspiration might have taken place before the complete birth of the child, and before it had a separate existence from its mother, although it had died before it was completely born. For the defence, the medical testimony was relied upon as establishing that there was no satisfactory proof that the child was ever born alive. The tests relied on as tending to show that failed, as they were explainable from the decomposed state in which the body was found, which alone might account for the lungs floating and crepitating, and probably also for their florid colour. But it was unnecessary to establish this, for all the appearances were consistent with the child having breathed during parturition, and yet with its never having been born alive. The sleeve round the neck of the child might have been used by the mother in her agony and distress during parturition to assist the labour, or to carry the dead body of the child afterwards when made into a bundle. The evidence pointed clearly only to the concealing of the dead body of the child in order to conceal its birth, for which offence the prisoner might be found guilty on this indictment, and the learned counsel was sure that the jury would feel greatly relieved in the exercise of the responsible duty cast upon them to arrive at such a conclusion fairly upon the evidence. His Lordship having carefully summed up the evidence, the jury retired, and on their return found the prisoner guilty of concealment of birth.

This certainly looks like a defeat of justice. We do not quarrel with the verdict, nor do we challenge the conduct of the judge, jury, or counsel. But if the old doctrine be regarded, that a child on breathing becomes a living soul, whether separated or not from the mother, then we cannot but think with Mr. Hunt, who referred to this subject in the recent parliamentary discussion on Mr. Cox's motion, that some legislation is necessary to provide a penalty specially for the destruction of a child after it has breathed, and before it has attained to an entirely separate condition by the severance of the cord. The matter is really one of great importance, and we hope that in the Legislature next session an attempt will be made to amend the state of the law which at present favours the growing evil of infanticide.

"A VERY SORRY SITE."

WE extract the following paragraph from the City article of *The Times*:—

"The Governors of St. Thomas's Hospital have definitively arranged for the purchase of the proposed site at Stangate, on the bank of the Thames, adjoining Westminster Bridge, for £95,000."

It is possibly only a straw thrown up to see which way the wind of public opinion sets. If there be no more foundation for the report than there exists at present for the building at Stangate, we may treat the matter as a *canard*. But if the "Grand Committee" of St. Thomas's Hospital have made any such disgraceful appropriation of the money that belongs of right to the sick poor, we warn them that so gross and shameless an abuse of a trust will bring a storm of indignation about their ears that will compel even their obstinacy to succumb.

Correspondence.

"Audi alteram partem."

THE CASE OF CANCEROUS TUMOUR IN THE COLON AT TUNBRIDGE.

To the Editor of THE LANCET.

SIR,—I cannot allow the report sent by Dr. Bell of the fatal illness of my dear friend, William Condell, to pass unnoticed and uncontradicted.

My name is there introduced as though I had been merely anxious to perform an unnecessary and unjustifiable operation, and all mention is omitted of the fact that the patient was a medical man, one of my oldest and most intimate friends. He had occasionally consulted me for some years, and my opinion was the deliberate result of long and careful consideration. Within a month of the first date given by Dr. Bell, a detailed account by Mr. Condell of his symptoms led me to the conclusion that a stricture existed at the lower part of the intestinal canal. No mention whatever was made of Dr. Bell, and I expressed a wish to consult on the case with another hospital surgeon. A week later I received a more cheerful letter from him; but in a fortnight I received a hasty telegraphic summons from his wife, saying he was dangerously ill. Then I first met Dr. Bell, whose name I had not heard before from my patient. Dr. Bell's account of my proposal to operate is simply and entirely untrue, as will be seen from the enclosed letter of the patient's father-in-law, himself a retired medical man, and Mr. Andrew, a solictor at Tunbridge Wells:—

"7, Bennett-street, July 31st, 1863.

"MY DEAR SIR,—I have just seen in THE LANCET, with extreme surprise and regret, a report sent by Dr. Bell, of Tunbridge Wells, of the case of my dear son-in-law, Mr. Condell. The report is so inaccurate, as well as unjust towards you, that you may if you think fit make use of my name in contradiction of Dr. Bell's statement with regard to the operation. After having seen our patient, you stated distinctly (so far from urging immediate operation) that it was then inadmissible; but that you hoped and believed the time might come when surgical interference would be of immediate service. I know how grieved poor Condell would have been at this attack upon one whose skill as well as regard he valued so highly as yours.

"Believe me to be, my dear Sir,

"Yours faithfully and truly,

"ROBERT HICKS."

"1, Calverley Mount, Tunbridge Wells, 31st July, 1863.

"MY DEAR SIR,—I hasten to reply to your note just received, and in reference to my late friend's (Mr. Condell's) case, I remember well that when you left his house on the night of the first visit, you were of opinion that the colon was not sufficiently distended to admit or justify an operation, and I so informed Mr. Trustram the same evening.

"Yours very truly,

"R. ANDREW.

"P.S.—I have not seen THE LANCET, and therefore write this without knowing what the question is. "R. A.

"S. Solly, Esq."

On this occasion I communicated my knowledge of the case to Dr. Bell, as also my fears that an operation alone would relieve him; but, wishing to give the subject every consideration, suggested that Dr. Wardell should join our consultation, and expressed the same wish with regard to Mr. Trustram. Dr. Bell, who has only lately arrived from Edinburgh, may not be aware that the latter gentleman is one of our best provincial surgeons, whose opinion I sought because I valued it, and because I feared lest deep anxiety at the critical condition of a personal friend might unconsciously bias my judgment.

It appeared on examination of the patient that there was so much tenderness, and so many signs of enteritis, (with the impossibility of ascertaining how much the colon was distended in the loins,) as to render an operation that night undesirable. But I intimated a hope that at a future time such interference might prolong his life, and held myself in readiness to perform it at any moment.

Some temporary improvement during the next few days was followed by a relapse, and another summons to me to come down immediately. On my arrival Dr. Bell was absent, as he did not expect me by so early a train; consequently, I did not hesitate to see my friend in company with Mr. Trustram. He expressed his willingness to submit to any operation I might propose, and also to see another surgeon if I thought it expedient. He named Mr. William Fergusson, who kindly accompanied me on my next visit, and whose opinion is stated by Dr. Bell.

Twenty-eight hours afterwards the patient died in great agony from ruptured intestine. Post-mortem examination disclosed, not a tumour pressing on the gut from without, but a cancerous deposit between the mucous and muscular coats of the intestine itself, occupying its whole circumference, and materially if not totally obstructing its calibre.

Dr. Bell places much reliance upon what he considers proof that the gut was not totally occluded. To my mind it seems a logical inference that as death resulted from rupture above the stricture, obstruction must have existed, and would have been relieved by Amussat's operation. Dr. Bell moreover does not realize the physiological fact that an intestine thus thickened and diseased was quite incompetent to its peristaltic function, notwithstanding small occasional discharges forcibly brought about. His other remarks upon Amussat's operation show a total inexperience. I have twice performed it myself, and with such decided relief in each case that I have determined not to omit it when symptoms are urgent and there is no doubt as to the seat of the obstruction.

I make, purposely, no comment on the tone of Dr. Bell's communication. It is sufficient for me to state facts which he has grossly misrepresented, and to lay before your readers a view of the case from which I have seen no reason whatever to depart. Indeed, on taking a retrospective glance at the whole course of the symptoms, it appears to me matter of regret that my original opinion was overruled.

I am, Sir, your obedient servant,

Savile-row, August, 1863. SAMUEL SOLLY.

To the Editor of THE LANCET.

SIR,—I very much regret that Dr. Bell should have interspersed the relation of a very interesting case of Cancer of the *Rectum* with remarks that bear on their face an animus of hostility to those from whom he received, during its treatment, every possible consideration and professional courtesy. I have not the time to enter into many of the statements therein made.

Whatever may have been the reason for Mr. Solly requesting my opinion on the case on the 11th, I know not, not having been able to meet him on that occasion. On the 12th I received a second summons from the patient, and met Dr. Bell and Dr. Wardell. The visit was repeated the following day. On the 15th I received a message from the patient, who was himself a surgeon and in practice, requesting me to pay him a visit, as he particularly wished to see me alone. I desired the messenger to go at once to Dr. Bell, and state the time I should be with the patient. When I got there, which I did twenty minutes before Dr. Bell, (but not before the time named,) the patient told me he wished me to make a careful diagnosis of his case, as he not only wished for my unbiased opinion, but that he might be spared the pain and annoyance of the external examination to which he had been daily subjected; with an explanation also as to how he came under Dr. Bell's care, and an apology for not having sought my opinion earlier. I promised to visit him again in the course of the day for that purpose, at the same time begging him to allow matters to proceed as they were; thus, I think, saving Dr. Bell from some annoyance of feeling.

With respect to Mr. Solly's conduct in this case all I can say is, after thirty-four years' experience, that had he done less he would have been greatly wanting to an old medical friend.

Your readers will be surprised, perhaps, to hear that this patient was a brother practitioner, and that his father-in-law, who was staying with him the whole of the time, was a surgeon also.

Dr. Bell adds that Mr. Trustram made the autopsy—no small matter on that occasion I can assure you. Why did Dr. Bell allow himself to be indebted to a person, with respect to whom he was silently penning so unfounded, and inferentially, so malicious an attack?

The feeling from which all this animus has arisen is one which, however strongly it may be held by Dr. Bell, is hardly tenable, at all events in this country—viz., that a patient, even if a medical one, can take no opinion on his own case, except through the medical attendant who has been the first to see him. Had this patient been other than a professional brother, I should have felt on my third visit that he had placed himself in my hands.

I remain, Sir, your obedient servant,

Tunbridge Wells, July, 1863. CHARLES TRUSTRAM, M.R.C.S.

ON THE TREATMENT OF ACUTE HEPATITIS IN ITS SUPPURATIVE STAGE.

To the Editor of THE LANCET.

SIR,—In my remarks on this subject (in THE LANCET for the 6th and 13th June last) I showed, from long personal experience, that the liver may be repeatedly punctured deeply with an ordinary trocar without any evil consequence; the greatest inconvenience witnessed, after many such operations, being slight local irritation, requiring a few leeches over the wound—and that but very rarely. I also showed that in cases of the kind where the abscess sought had been missed, and the patient died subsequently of hectic and exhaustion, it was extremely difficult to trace the marks of the trocar on the liver, there being no signs of peritoneal irritation or effusion of any kind. I further showed that in cases of much evident hepatic enlargement, where the trocar had been used more than once in an unsuccessful search for abscess, the operation had been followed by the speedy absorption of enlargement, which had previously resisted all the routine methods of bringing about its dispersion; and I remarked that this result was in accordance with that obtained by the Indian hakims, according to the statement of the late Inspector-General Murray, who was, I believe, the first to bring to notice that native mode of dispersing hepatic, and even splenic, enlargements. I then adverted to the practice inculcated by authority, at present, of abstaining from all operative interference with hepatic abscess until the matter has made its way unmistakably to the surface, and intimated my entire dissent from it; urging, on the contrary, that as soon as symptoms present indicating abscess in the liver, our efforts should be directed to detecting its seat, and evacuating it as soon as possible, instead of allowing the liver to become gradually more and more destroyed by the increase of pus, and the constitution so exhausted by concomitant hectic as to be quite unable to set up any restorative action, even supposing the abscess to evacuate itself. I then gave some cases of recovery after operation, and drew particular attention to one in which a very deep abscess was tapped when it contained only about two ounces of pus, and in which, by the slipping out of the canula and the patient's refusal to have it replaced, I had it accidentally demonstrated, by the man's speedy and perfect recovery, that we had much to learn in the treatment of such cases, and had to unlearn much of our theory. That man's conduct in recovering under such circumstances, when, by all the rules of art, he ought undoubtedly to have died (*vide* Dr. Maclean's letter in number for 18th July), will, no doubt, by that worthy Professor, be considered "highly irregular;" nor will he, I trust, "fail to point it out" to admiring griffs, should it ever pass through the Royal Victoria Hospital; nor to remark, as adding to the enormity, that the abscess in this case (as well as in two others given by me) was deep in the thickest part of the right lobe, and not in the left. "These facts are commended to the careful consideration" of Dr. Maclean (to quote his own words) when next he feels inclined to ridicule what he calls "prospecting the liver." All I will say is that I greatly regretted not having met such a case before almost the close of my Eastern service. Had it occurred in my earlier days, I should certainly have acted upon the hint, and withdrawn the canula from any deep-seated abscess I might have been fortunate enough to hit upon. I hope some of my successors in the East will try the plan I have advocated (*non obstante* Dr. Maclean's "protest"), and give us the results. For their encouragement in so doing, I beg to annex the following extract from a letter received from Deputy Inspector-General Templeton, an officer distinguished not only as one of the best practical men in the service, but also for his high scientific attainments. He says, under date of 29th June—"I have read your two papers in THE LANCET, and indorse all you say. You may remember that I got long exploring needles made, not being satisfied with the insignificant things we got from India. I never saw a bad symptom following them or the trocar, and I have made some surprising plunges in. I had three curious cases with every symptom of liver abscess, hectic and all, and I set to exploring them, intending to operate, but after puncturing in various directions could find no abscesses, and postponed for a further search after a

day or two should pass over; when, behold, every symptom ceased; pain, œdema, swelling, and hectic, all disappeared, and they all got well. I have only had two livers run to abscess since I left Ceylon. One was a neglected patient of the Ordnance Department at Chatham. I could find no place to puncture, and had no needles; so I cut down on the most likely part, and rubbed the bottom well with potassa fusa: saved him. The other was a gunner at Malta, with whom I did the same, as I could find no pointing. A lot came away, day after day; and he was invalided, as crooked as a shearing-hook. His liver, on his return to England, appeared to have totally disappeared; so only a mere shell, comparatively, must have been left."

These facts are also "commended to the careful consideration" of Dr. Maclean, who no doubt will remember what our countryman Burns said:—

> "Facts are chiels that winna ding,
> And downa bide disputing."

I was induced originally to bring them forward to caution my young brother officers from being unduly swayed by such *ex cathedrâ* dictums as that quoted by me from the "Manual for the Diseases of India"—namely, "All operative interference is now universally condemned." My motto has always been "Nullius jurare in verba magistri;" or, as the Scripture has it, "Prove all things, hold fast that which is good"—i. e., Follow whatever practice you find saves life, no matter what deep-reasoned theory it may be irreconcilable with.

Dr. Maclean seems to think that, because there were only fifteen recoveries out of eighty-one abscesses punctured in Madras, the operation is clearly negatived; whereas it may just as reasonably be said that it was performed too late in the vast majority. So, in his own singularly unfortunate practice among native patients, he is careful to guard himself against being supposed ever to have operated "till the existence of pus was well ascertained, both from the physical and constitutional symptoms; in no case was there any 'prospecting' on 'faith' or 'suspicion.'" In other words, the poor wretches were allowed to linger day after day with an enlarged liver and wasting hectic till the matter made its way to the skin, having in its course thither burrowed a large cavity in the patient's liver, and exhausted altogether his originally feeble constitutional powers. Then the Doctor operated and the patient died, both "strictly agreeable to regulation"! *and what more would you have?* It is quite clear that, treated on such principles, the very cases which are now given by Dr. Templeton and myself as examples of successful operation, would most probably have ended by swelling Dr. Maclean's large list of failures.

As to preferring to *chance* an hepatic abscess bursting through one's lung or bowels rather than, as my 61st man said, "have the satisfaction of seeing it out before we die," I most decidedly differ from Dr. Maclean, and so, I think, would most of the faculty, if the case were unfortunately their own hard fate. To say nothing of the fearful anxiety, day after day, while the side grows bigger and the paroxysms of hectic more severe, there is the chance of its bursting fatally elsewhere, or of its proving fatal by exhaustion from copious purulent expectoration, or wasting diarrhœa, both of which must often have happened in the course of Dr. Maclean's long experience, as they have in mine. And what shall we say of the many sad cases where the patient dies before either the abscess bursts internally or points externally, and where post-mortem examination shows that a trocar-thrust would at any moment have evacuated it? How many such crowd our Indian hospitals and die forgotten; or, if brother officers or personal friends, leave long a lingering vain regret in our memory! One such case I am daily reminded of by a keepsake bequeathed to me, and with it I will conclude this too lengthy letter.

Dr. H——, surgeon in the P. O. service, an old hand, always in excellent condition and health, was called up in great haste one wet monsoony night on passage to Suez. He rushed out, as he had lain, in shirt and pangamas, got drenched, being long delayed, and never was well afterwards, having irregular attacks of fever, loss of strength and appetite, with emaciation and occasional diarrhœa, attended with weight and uneasiness in the side. He nevertheless stuck to his duty, till absolutely ordered on shore as unfit for it, and was then recommended to take a spell in Ceylon, the best authorities in Calcutta assuring him that he only needed rest, good diet, and a cooler climate, to put him all to rights. Accordingly he came to Galle, and consulted me, principally for his febrile attacks. I came to the conclusion that he had an abscess in the liver, though there was no visible enlargement anywhere, and urged him to let me "prospect it" (as Dr. Maclean would say). He altogether scouted the idea, giving many reasons why it could not be so, and for a week or so seemed to be shaking off the fever and decidedly improving. Then again he began to decline, and I grew more positive in my diagnosis, fixing on one spot, just about the convexity of the ribs, over the thick part of the liver, as the first place for puncture, and marked it black that he might examine it in his glass. He, however, like most medical patients, hesitated and disputed day after day, getting gradually weaker, till at last the most fearful rigors I ever saw set in, and with them the commencement of sinking. Then he urged an operation, but I declined, and he died very rapidly. A few hours after his decease I examined the side, no post-mortem being practicable, and thrusting a trocar in at the blackened spot, gave vent to about half a pint of creamy pus. So much for waiting for "physical signs," or evacuation throught the lung and bowels.

I am, Sir, your obedient servant,

J. C. CAMERON, M.D., Dep. Insp.-Gen.

Nottingham-place, August, 1863.

ORIGIN OF SPECIES.

To the Editor of THE LANCET.

SIR,—I have no desire to enter into controversy with Mr. Alison, but his theory of the origin of species appears to me so visionary, his knowledge of *facts* in natural history, geology, &c., so superficial, that I am surprised his writings find a place in your journal. Read, Sir, his letters lately published in the *Mining Journal*, and you will at once see the truth of my assertion. In his letter, published by you, he attempts to prove his theory by giving some instances "of spontaneous creation of vegetable and animal life," and says, "if we top-dress a paddock which never before produced a blade of clover, with lime fresh from the kiln, we shall have clover growing in abundance." Does he not know that seed will retain its vitality for thousands of years when deprived of the ordinary stimulants to growth—light, warmth, moisture, and a congenial soil. The clover plant soon degenerates and dies in a soil which contains no lime, but the seed lying dormant in the soil germinates as soon as the above requirements are fulfilled. The natural food, as it were, of the clover is lime; the Devonshire farmers know this, and invariably top-dress their grass lands with lime to stimulate the growth of the under-crop of clover. A correspondent to the *Agricultural Magazine*, 1845, vol. i., p. 106, says, "Most of the clovers are indigenous to our climate, and the white clover is commonly found in calcareous soils, where its seeds will lie dormant for ages; so that it frequently springs up, as it were naturally, if turned up, or if rough lime be allowed to lie for any great length of time upon the land."

Another article on the use of gypsum or sulphate of lime as a top-dressing for clover, occurs in vol. ii., p. 40. In very many railway cuttings numerous plants have sprung up that have long ceased to grow in the neighbourhood, have died out, in fact, from having exhausted their *principle* of nourishment in the surface soil, but on a deeper soil being turned up and the seeds also brought under the influence of light they again germinate. Mr. Alison says, "If we cut down a primeval forest in any country an entirely new *flora* and *fauna* will be created." He may witness this *creation* (!) at any time in this country on the cutting down of a plantation or an oak coppice; for immediately the bright sunlight is admitted to the surface of the soil there springs up, as if by magic, a dense undergrowth of such plants as had previously grown there, but which, perhaps, the *oldest inhabitant* does not remember to have existed there before. Oak coppice is generally cut once in from twenty-six to thirty years before it is cut down; nothing but the brown earth and decayed leaves of years is seen beneath its thick foliage, with here and there, where the rays of the sun find entrance, a few ferns, coarse grass, and brambles. The year after the coppice is cut and the thick shade is removed, the whole surface springs into life, and it is the sickle only of the woodman that prevents this undergrowth of furze, thorns, brambles, &c., from overpowering and destroying the young shoots of the oak, that it is his or his master's interest to preserve. All this undergrowth again dies out as soon as the oaks grow up and exclude the sun. I have said enough to show that the "*new flora*" is not a new creation. The "*new fauna*," as far as insect life is concerned, I believe capable of being treated in the same way; for may not innumerable chrysales and insect ova lie buried in deep shade for many

years, to be brought to their new existence under the vivifying influence of the sun; so that the species that have long disappeared from the spot may again make their appearance? We all know "the tale of the frog." I will relate two instances, derived from authentic sources, of prolonged vitality; in one case, in the ovum of an insect, in the other in some chrysales. The Rev. Dr. Dwight, formerly President of Yale College, U.S., in the edition of his "Travels in New England," published in London in four vols., 1822, relates that a person wishing to improve an old dining-table had it planed preparatory to being repolished, when the plane laid open a cavity in the wood. He was much surprised, on examining the hole, to find there the egg of an insect from which in a short time a small worm made its appearance. I cannot give the extract, not having the work by me, but the above are the main points of the circumstance. In the other instance, when the men were excavating beneath the Bayswater-road for the large sewer, they discovered at some depth beneath the surface, in the gravel, five or six large chrysales; the one seen by my informant was in a state of vitality, moving freely when touched. These must have existed in the spot where found since the deposit of the gravel.

A great many of Mr. Alison's *facts* are capable of being explained by any ordinary naturalist. The theories of "spontaneous creation," "natural selection," *et multis aliis*, on the origin of species I leave to others more capable than myself of treating them according to the known laws of nature, and

Remain, Sir, yours obediently,

J. BRENDON CURGENVEN, M.R.C.S.

Craven-hill Gardens, August, 1863.

To the Editor of THE LANCET.

SIR,—If Mr. Alison will permit another searcher after truth to share the discussion of this problem with him, I would respectfully ask him to reply to the following questions, as a basis of argument against his theory of spontaneous creation.

1. Does he think that there is really proof, geological or historical, of the Deluge?

2. If he admits the fact of the Deluge, does he think that all animal life was destroyed by the submersion of the earth, or that there were remnants of typical species preserved?

I restrict this question to animal life, because I think, with our present knowledge, we are justified in assuming that, even if the living vegetation at the period of submersion perished, vegetable growth was renewed by the germination of seeds deposited previous to that event, which retained their vitality during the persistence of the flood, and that this was called into vigour and development, on the subsidence of the water, by the operation of the same elemental forces which we recognise as producing the same results at the present time.

A clear conception of his views on these points will enable me to answer more definitely his statements, particularly with reference to the higher organizations, contained in his reply to Mr. Lankester in the number of THE LANCET of the 25th ult.

I am, Sir, yours very respectfully,

Kennington, Aug. 1863. M.

To the Editor of THE LANCET.

SIR,—Mr. Alison, in his correspondence with Mr. Lankester, says "'crosses' do not breed." I believe this statement to be an error, opposed to common experience, and to that truth the advancement of which is the chief object of Mr. Alison's desire.

I think it is well known that the hybrids (*leporides*, as they are called) of the hare and rabbit are not only fertile with other hares and rabbits, but with each other, and have been successfully cultivated for commercial purposes.

I am, Sir, yours, &c.,

Woburn, July, 1863. THOMAS MILLER.

PAYMENTS FOR "CHILDBIRTH" UNDER THE NEW POOR LAW.

To the Editor of THE LANCET.

SIR,—I beg the insertion in your journal of the accompanying correspondence, because I do not remember to have ever seen the point at issue so clearly defined or so conclusively determined as in this instance. The decision of the Poor-law Board, although adverse to myself, and, in my opinion, a wrong one, I am bound to consider final; but the publication of the following letters possibly may induce such remarks from our professional brethren as may ventilate the subject, and lead to a better result for us in future.

I remain, Sir, yours &c.,

Holsworthy, Devon, Aug. 1863. T. LINNINGTON ASH, L.R.C.P.Ed.

Holsworthy, July 16th, 1863.

MY LORDS AND GENTLEMEN,—The guardians of this union have disallowed two items in my bill of extras for medical attendance on two cases of premature labour, on the ground of doubt whether they come under the intention of the 182nd Article of the Consolidated Order which relates to the payment of medical officers in cases of "childbirth." And it has been mutually determined to submit to the decision of your board, which shall be final. As I am quite satisfied with the way in which the case has been proposed to you by Mr. Braund, I will not recapitulate the facts, and merely wish to suggest that the order attempts no distinction between cases of premature or mature, viable or not viable, live or still-born; and, moreover, it is well known that cases of premature labour are often more difficult of treatment, more serious to the patient, and of greater responsibility, delay, and trouble to the medical practitioner than ordinary cases of labour. I have only to add, that I have on a previous occasion been paid by our board for a similar case, and consequently that I am jealous of a departure from such a precedent, and can submit to it only when it can be clearly shown to be irregular or illegal.

I have the honour to remain,

My Lords and Gentlemen,

Your obedient servant,

Poor-law Board, London. T. LINNINGTON ASH.

Holsworthy, July 16th, 1863.

MY LORDS AND GENTLEMEN,—I am directed by the board of guardians of this union to report that Dr. Ash, the medical officer of the fifth district in this union, claims to be paid, under Art. 182 of the Consolidated Order, dated July 26th, 1847, for his attendance on Mary Hancock and Ann Croker, two women prematurely confined, a fee of 10s. in each case. It appears that neither woman was more than five months advanced in pregnancy. Under these circumstances the board will feel obliged to be informed whether in these cases, as well as in all cases of premature birth, a medical officer is entitled to be paid the above fee the same as if he attended "any woman in or immediately after childbirth."

I am, &c.,

Poor-law Board, London. GEO. BRAUND, *Clerk*.

Poor-law Board, Whitehall, July 21st, 1863.

SIR,—I am directed by the Poor-law Board to transmit for your information the accompanying copy of a letter which the board have addressed this day to the guardians of the Holsworthy Union respecting your claim as medical officer of the fifth district to midwifery fees in the cases of two poor women named Mary Hancock and Ann Croker.

I am, Sir, your obedient servant,

H. FLEMING, *Secretary*.

T. L. Ash, Esq., Medical Officer, Holsworthy.

Poor-law Board, Whitehall, July 21st, 1863.

SIR,—I am directed by the Poor law Board to acknowledge the receipt of your letter of the 16th instant in reference to the claim which has been made by Dr. Ash, the medical officer of the fifth district of the Holsworthy Union, to the midwifery fees prescribed by Article 182 of the Consolidated Order, for his attendance in the cases of Mary Hancock and Ann Croker.

I am directed to state *generally* (the italics are ours), that the midwifery fee prescribed by the regulations is for the delivery of a woman in *childbirth*; and that the board consider that the term *childbirth* only applies to a case in which the child was or might have been born alive.

I am, Sir, your obedient servant,

H. FLEMING, *Secretary*.

Geo. Braund, Esq., Clerk to the Guardians of the Holsworthy Union, Holsworthy.

*** Considering the great trouble and danger occasionally associated with premature labour, we think it unjust to the medical officer that no fee should be allowed for his attendance in such cases. According to the Consolidated Order of the Poor-law Board as at present in force, Dr. Ash is clearly not entitled to extra fees in the above cases. The order is as follows:—

"Art. 182.—In cases in which any medical officer, either for the workhouse or a district, shall be called on by order of a person legally qualified to make such order to attend any

woman in or immediately after *childbirth*, or shall under circumstances of difficulty or danger, without any order, visit any such woman actually receiving relief, or whom the guardians may subsequently decide to have been in a destitute condition, such medical officer shall be paid for his attendance and medicines by a sum of not less than ten shillings nor more than twenty shillings, according as the guardians may agree with such officer."

Lumley, in his Manual, in reference to this order remarks, "that the term 'childbirth' applies only to cases where the pregnancy is so far advanced that it is possible that the child may be born alive; hence the delivery of a seven months' child is within it, and the fact of the child having died before delivery makes no difference." Now it certainly, we think, should be left to the discretion of the guardians to pay the medical officer for attendance upon cases of abortion or premature labour. These are exceptions to common cases of illness, and often involve great anxiety and labour on the part of the medical attendant. The term "generally," as used by Mr. Fleming in answer to the application made to the Poor-law Board on the subject, would seem to imply that exceptions to the Consolidated Order are allowed. What these exceptions are should be as far as possible clearly defined. If the Poor-law Board decline to afford the definition, surely the guardians should be entrusted with the power of awarding fees in cases in which, according to their judgment, the practitioner is entitled to receive them.—ED. L.

STUDY OF CHOLERA BY MILITARY SURGEONS.

To the Editor of THE LANCET.

SIR,—A correspondent of yours, signing himself "Dr. Macloughlin, Member of the Legion of Honour," has written a paragraph or more of nonsense in two late numbers of your valuable journal, to show that he possesses a *secret* which he is anxious to impart to the *ignorant* Army Medical Department, but those red-tape, stingy people at the War Office will not reward him for it. He says that the question at issue now is, "Has the Army Medical Department ever attempted to study cholera scientifically?" As an individual member of the Department, I beg to reply that I have.

I think it unnecessary in this place, and at the present time, to enter fully into the views entertained by me of the pathology and treatment of the disease in question. It may, however, be as well to inform Dr. Macloughlin that we, the members of the Department, are bound down to no particular views. The Director-General very wisely permits us to think and act as our experience and reading teach us, so long as we practice orthodox medicine. We as a body are well acquainted with the medical literature of the day. Our views are those of the best men in the profession.

If Dr. Macloughlin will kindly inform me what his *secret* is, and will tell me in what particular our acts have proved to him that we have not "the medical knowledge to appreciate and profit by the pathological researches relative to this disease which have been placed before us," I shall then be happy to discuss the whole question with him, and thereby relieve the Director-General, who I am quite sure is not inclined to waste valuable time in a useless controversy with such a notorious grievance-monger as Dr. Macloughlin. I can afford the necessary time for this purpose, as I am at present taking a holiday in search of health.

I remain, Sir, your obedient servant,

JAMES CRERAR,
Surgeon, 60th Rifles.

St. Heliers, Jersey, Aug. 1863.

*** Dr. Macloughlin, having made a serious charge against the medical officers in the army with respect to their knowledge of the pathology and treatment of cholera, is bound to make good his assertions. We have admitted his letters on cholera into our pages with the view of elucidating the matter. The subject is one of the deepest importance, and cannot be too largely discussed. Dr. Macloughlin is an enthusiast, and no doubt animated by praiseworthy motives; but his wholesale charges of ignorance on the part of the army medical staff are not to be justified by mere declamatory assertion or preconceived theory.—ED. L.

THE CARMICHAEL AND HARLEY PRIZES.

To the Editor of THE LANCET.

SIR,—Probably you will have no objection to publish the following correspondence, for the purpose of showing (as I think) the entire disregard of law and justice on the part of two of our corporate bodies. It shows, moreover, that the Medical Council, as at present constituted, is useless as a court of appeal in matters relating to education and scientific progress. I am, Sir, yours obediently,

Beaufort-street, Chelsea, Aug. 1863. EDWARDS CRISP, M.D.

To the President and General Council of Medical Education.

GENTLEMEN,—I have forwarded to each of you a pamphlet respecting the Carmichael and Harley Prizes, believing, as I have stated in my printed letter, that one of your functions is to regulate matters in connexion with education and the progress of medical science.

The particulars relating to these prizes are fully given in the pamphlet. In the one instance, three gentlemen (one of them a colleague) awarded a prize to Dr. Harley, *who had not complied with any of the injunctions required by the Council of the College of Surgeons;* and in the other, the Council of the Dublin College of Surgeons deputed three of their members to decide a matter that Mr. Carmichael directed by his will should be left to the decision of all the Councillors. The Council of this College, moreover, advertised that prizes of £200 and £100 would be given to the best and second-best essays on Medical Reform (*without reservation*), as directed by Mr. Carmichael; and although there were several candidates, the award of the prizes was illegally withheld.

I shall take the liberty hereafter of placing before you other matters relating to corporate illegalities, which I believe specially come within your province. In the mean time I respectfully beg of you to investigate the grievances of which I complain, trusting you will believe that my motive in making this appeal is neither a vindictive nor a pecuniary one.

I am, Gentlemen, your obedient servant,

EDWARDS CRISP.

June 18th, 1863.

SIR,—I beg to inform you that your memorial and the pamphlet which accompanied it have been submitted to the General Medical Council during their recent session. But the Council found themselves obliged to pass the following resolution:—"That the Council is of opinion that the matters referred to in a memorial presented by Dr. Edwards Crisp, respecting the Carmichael Prizes, is not within the powers of the Council as limited by the Medical Acts, and the Council therefore decline to enter on its consideration."

I am, Sir, your obedient servant,

Dr. Crisp. FRAS. HAWKINS, *Registrar.*

IS AMAURosis PRODUCED BY TOBACCO?

To the Editor of THE LANCET.

SIR,—You did me the honour to insert a paper of mine on amaurosis in your impression for the 25th ult. May I now ask space for a few additional observations on the same subject? I am induced to make this request that I may notice a communication of M. Sichel to the Société Médico-Pratique de Paris at its *séance* of Feb. 23rd in the current year, and reported in *L'Union Médicale* of May 5th. I think it is just to M. Sichel and myself that I should state that my paper was communicated to THE LANCET in March last, and that consequently I had not had an opportunity of making myself acquainted with his very important observations "De l'Influence du Tabac Fumer sur la Production d'Amaurose."

I now avail myself of the valuable opinions of that great ophthalmologist in confirmation of the views that I then ventured to publish on the relation between amaurosis and the influence of tobacco. It is true that he does not describe the pathological condition as an atrophy of the optic nerves, as I was induced to consider it in the three cases recorded; but more recent observation has satisfied me that this is the last stage only of a progressing condition.

I was anxious to cite cases in which the abnormity was as positive and as evident as possible, and the attendant subjective symptoms correspondent. I had no doubt that I was enabled to pronounce certain conditions of the fundus of the eye to have been produced by the influence of tobacco, but as they were comprised in differences of vascularity and coloration of the optic nerve, I felt that I should have some difficulty in

convincing the sceptical, unless I was enabled to adduce more persistent and reliable phenomena.

M. Sichel has no doubt of the sufficiency of the cause, nor of its frequency of operation, for he considers that no one can long smoke more than twenty grammes of tobacco per diem without impairment of sight, &c.

According to his observation, "Les symptomes ophthalmoscopiques sont négatives ou peu prononcés: papilles optiques tantôt très blanches, surtout dans l'une de leurs moitiés—tantôt un peu injectées, leurs contours mal circonscrits, quelquefois en partie effacés; rétine peu injectée; vaisseaux centraux tantôt normaux, tantôt élargis; les veines centrales surtout très élargies quelquefois, quand l'affection est arrivée à son dernier dégré."

Though I did not, for obvious reasons, detail the minutiæ of the ophthalmoscopic appearances in the cases of which I wrote the outlines, yet all these conditions were more or less present. As I was writing for the profession at large, my object was to state the condition of the eye to which the loss of vision was ascribable.

I was induced to use the term amaurosis as I knew of no other that conveys without circumlocution that form of blindness which has its origin in disorder of the percipient, rather than in any other of the structures of the eye. There may be a question as to the condition of atrophy in the early degrees of this affection; hence some would hesitate to designate it atrophy. I have noticed a pallid state of the nerve in some cases; that, perhaps, ought to be styled anæmia rather than atrophy; but, as I have stated, I consider it a question of degree rather than of essence.

Though I do not feel justified in going so far as Sichel, and should not expect to find loss of function in all old abusers of tobacco any more than I should expect to find cirrhosis in all old sots, or partial blindness in all those saturated with syphilitic poison; yet I am convinced, from much observation, that the injurious effects of tobacco may be seen in the eye much more commonly than is usually believed. There is no doubt that some men may transgress the laws of health with apparent impunity; but it would be very unsafe thence to argue that all may do the same. Again, we know that some physiological agents influence the vital conditions in various ways: in one man, the brain may be more susceptible of the injurious effects of alcohol than any other organ; in another, the liver; and in a third, the kidneys. And yet further, one portion of the nervous centres may be more affected than any other; indeed, all the others may be quite free from any reaction.

As with alcohol, so with tobacco. Our patients give the most opposite accounts of their feelings &c. from the use of tobacco, physiological and pathological.

In conclusion, I feel assured that if Mr. Hart, who has taken exception to my deductions, will continue in a fair and candid spirit to examine cases, he will soon be convinced that tobacco is largely concerned in the production of amaurosis, and that the change in the nervous structures of the eye is ultimately one of atrophy.

I remain, Sir, your obedient servant,

Queen Anne-street, Aug. 1863. J. C. WORDSWORTH, F.R.C.S.

ARMY MEDICAL DEPARTMENT.

To the Editor of THE LANCET.

SIR,—The attention of gentlemen who may contemplate entering the Army Medical Department should be directed to the following particulars:—

In her Majesty's Royal Warrant, of October, 1858, are contained the following statements:—"The relative rank of medical officers shall carry with it all precedence and advantages attaching to the rank with which it corresponds (except as regards the presidency of courts-martial, where our will and pleasure is that the senior combatant officer be always president), and shall regulate the choice of quarters, rates of lodging-money, servants, forage, fuel, and light, or allowances in their stead; also detention and prize money."

The interpretation of her Majesty's Royal Warrant by her Majesty's Indian Government is expressed as follows:—"General Order, No. 112, 1860.—With reference to that portion of her Majesty's Warrant, dated October, 1858, as relates to the pay and allowances of medical officers of her Majesty's army, it is notified that in accordance with the instructions received from her Majesty's Government, all claims to pay authorised by that Warrant will be adjusted upon the principle invariably adopted under similar circumstances—viz., by increasing the amount of pay proper, and making a corresponding deduction from the allowances." Consequently, medical officers in India have been deprived, for nearly five years, of the chief advantages of the Warrant—viz., the pay and allowances to which they consider themselves entitled by their increased relative rank.

Her Majesty, conceiving that medical officers, when they attained the relative rank of field officer, should appear mounted on parade, was pleased to order that forage, according to relative rank, should be issued to them. The interpretation of her Majesty's command by the Horse Guards is contained in the following Circular Memorandum:—"The Inspector-General has received the commands of his Excellency the Commander-in-Chief to acquaint medical officers that it has been ruled that regimental surgeons are not to be mounted on any parade for inspection; that they may, however, *appear* mounted in the field."

From the assurances conveyed in the Royal Warrant of October, 1858, many gentlemen have been induced to enter the Medical Department with the conviction that the Minister for War would, on the part of Government, compel the authorities to give those assurances a practical effect; but, unfortunately, after five years' service, a new Medical Warrant appears, in which the word "forage" is altogether omitted from the list of allowances, and medical officers are further humiliated by being told they are not fit to preside over committees on food, clothing, and other matters affecting the health and welfare of the soldier.

Medical officers are expected to pay the same donations and subscriptions to the mess and band funds as all other officers of the corps, but are not expected to indulge in the same privileges as their military *confrères* at these social gatherings, as will be seen by the following extract from *Punch*, a journal which seldom fails to combine truth with wit:—"To Medical Gents: Wanted, a considerable number of clever young Snobs to compete for the Commission of Surgeon in the Army, for which there is at present, and has been for some time, an extreme scarcity of eligible candidates, owing to the circumstance that men of ability and education sufficient to qualify them for the office refuse to accept it, unless upon the impossible condition of being treated as gentlemen. All applicants must be Members of the College of Surgeons and Doctors of Medicine who have received diplomas recognised under the Medical Registration Act. In addition to their professional qualifications, they must possess a capability of being continually and contentedly snubbed and patiently submitting to any kind of insult. They will be required at the mess-table to occupy a position subordinate to that of every combatant officer, even the youngest ensign, whose permission it will be necessary for them to ask for the purpose of giving the band or attendants any kind of order. It will be necessary for them to be regardless of those petty annoyances unavoidably inflicted by junior officers on their inferiors in rank, but superiors in age and attainments. No thin-skinned persons, endowed with any self-respect whatever, or animated in the least degree by the feelings of a gentleman, need apply."—Whether truth or falsehood most predominates in these remarks will be proved by the numerous letters which have been published lately upon the subject.

In conclusion, the questions for gentlemen who have lately entered the Medical Department of the Army, or who may think of doing so, are as follows:—Is it possible for an army medical officer, during his career, to save the smallest sum, even the money spent for his medical education? and, if not, is the pension, which he receives only on certified ill-health after a quarter of a century's service, adequate to support him as a gentleman; or is the sum one-third of that which would in all probability be realised after the above number of years in a private practice either in England or the Colonies? To say nothing of the liability of being ordered, at a moment's notice, to the blazing and sickly stations in Africa, East and West Indies, Burmah, China, and many other places, where existence is hardly endurable from the excessive heat and monotony.

Your obedient servant,

July, 1863. A DELUDED ARMY SURGEON.

PRESERVATION OF VACCINE LYMPH.

To the Editor of THE LANCET.

SIR,—As there appears to be a difference of opinion regarding the best method of preserving vaccine lymph, and conveying it from patient to patient, I beg to add my humble testimony in favour of capillary tubes. They are in my opinion far superior to any other means. But great care must be taken to get

the lymph as near to the centre of the tube as possible. This can, with very little trouble, be easily accomplished; for if any portion of it be too near either end of the tube, the chances are that it will become injured by the heat applied to hermetically close the ends. The tubes should never be used a second time; for, however much they may be soaked in water, you cannot depend upon their being clean, and in a fit state to receive fresh lymph; independently of which, they become much shorter, causing the lymph to be nearer the flame of the candle when closing the ends. When every care and precaution is taken, lymph thus procured can be kept in a liquid state almost an indefinite period. The tubes are as easily transmissible by post as points, by procuring two thin, flat, narrow pieces of deal, one of which is to be sufficiently hollowed to receive the tube, the other to cover it; tie them together, fold them up, and they can be transferred any distance without injury.

I am, Sir, yours, &c.,

Piccadilly, July, 1863. H. HODSON RUGG, M.R.C.S.

To the Editor of THE LANCET.

SIR,—During the last fifty years as a "Corresponding Vaccinator" of the National Vaccine Establishment, I have been obliged occasionally to apply to Dr. Hue, the Registrar, for a supply of vaccine lymph, and which has usually been transmitted to me between two flat pieces of glass, and also, at the same time, upon ivory points. With the latter I generally succeed; but very seldom with the former.

I am, Sir, yours, &c.,

Albion-hill, Ramsgate, July, 1863. JAMES RYMER, M.R.C.S.

To the Editor of THE LANCET.

SIR,—The statistics given in my last letter are simply the results of vaccinations almost exclusively with virus preserved on the flat glasses, and, I think, will bear comparison, as regards success, with the result from any other kind of preserved lymph. Direct arm-to-arm vaccination cannot be so easily accomplished in private practice, but it ought to be almost invariably successful—as Dr. Hewitt says, at least in ninety-nine cases out of every hundred. I have tried the points, of course, and the glass tubes, but I have discarded both for the flat glasses, as I find I am most successful with the latter. I may mention that my late partner, Mr. Warner, sent lymph to his brother in Sydney on flat glasses, and in the old time of the long voyage by sailing-vessels, and it was perfectly good for its purpose on its arrival.

I am, Sir, yours, &c.,

Cirencester, July, 1863. EDWARD CRIPPS.

MEDICAL TRIALS.

CARLISLE, AUGUST 1ST.

(*Before* Mr. Justice MELLOR.)

LAW *v.* ELLIOTT.

THIS was an action for slander. The plaintiff, Mr. Law, is a dentist in Carlisle, residing next door to the defendant, a physician, also practising there. It appeared that the parties had a quarrel and a lawsuit about a party wall, which was going on in June, last year. During that month a relative of the plaintiff returned from India, died in his house, and the remains were quietly removed in a hearse for interment at Penrith. A day or two before this a lady had stated to defendant that a patient of the plaintiff had died whilst under the influence of chloroform. Dr. Elliott, who saw the hearse at the plaintiff's door, immediately came to the conclusion that it contained the body of the patient who had taken chloroform, and that it was being surreptitiously removed. He, therefore, being a magistrate and deputy-mayor of the borough, followed the hearse to the station, and, in a conversation with the railway guard, told him the story that he had heard, and, reading the name plate on the coffin in an "oracular" manner aloud to the crowd which was then gathering around on the platform, "wondered" if the coffin contained the remains of a young lady who had died under the administration of chloroform at Mr. Law's. He continued to talk freely of the circumstance in other quarters, and, as he refused to apologise on the matter being explained to him, the present action was brought. The plaintiff proved that his practice had suffered considerably in consequence of the alleged slander. The defence was, that the defendant had acted *bonâ fide*, and without malice.

The jury found a verdict for the plaintiff, damages £100.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND. — The following gentlemen, having undergone the necessary examinations for the diploma, were admitted Members of the College at a meeting of the Court of Examiners on July 30th:—

Betts, John, Norwich.
Buckle, Wm. Henry Fleetwood, M.D. St. Andrews, Royal Mint.
Cooke, James, Stretford, near Manchester.
Eaton, Frederick Bond, Lansdown-road, Notting-hill.
Edwards, John Henry, Llangefni, Anglesea.
Fentem, Philip Sheldon, Egham, near Sheffield.
Hogan, Francis Vincent, Dartford.
Hyde, Edward, Witney, Oxon.
Loane, John, Dock-street, Whitechapel.
Moorhead, Joseph, Clones, co. Monaghan.
Morton, Samuel, Sheffield.
Oliver, George, Stockton-on-Tees.
Parks, Charles Holman, St. Columb, Cornwall.
Pollock, Edward James, Hatton, Hounslow.
Reid, James Gerhard, Cape of Good Hope.
Robinson, John Craven, Scarborough.
Snewin, Alfred George, Thornhill-square.
Taylor, Frederick Stubbings, Greenwich.
Taylor, Hugh, Norwich.
Taylor, Shephard Thomas, L.R.C.P. Lond., Dilsham, Norfolk.
Thomas, William Hopkin, Maesteg, Glamorganshire.
Trible, John, Torrington, Devon.
Weir, Christopher John, M.B. Trinity College, Dublin.
Wicksteed, Francis William Slow, Maidstone.
Woodhams, John Amos, Lamberhurst, Kent.
Yarrow, George Eugene, Central-street, Old-street.

The following gentlemen were admitted on July 31st:—

Best, Frederick Arthur, Bilston.
Bridgman, Isaac Thomas, Berkeley, Gloucestershire.
Bush, Henry John Ryder, Devonport.
Candle, Charles Edward, Henfield, Sussex.
Coombs, Carey Pearce, Frome, Somerset.
Harris, James Smith, St. John's Wood.
Holden, John, Manchester.
Johnson, Thomas Mason, M.D. St. Andrews, Manchester.
Kendal, Cuthbert Robert, Gateshead.
Kettle, Henry, Tipton.
Moore, Miller Montgomery, Buckstone.
Puzey, Chauncy, Surrey-square, Old Kent-road.
Reynolds, Edward Robert Bradley, Islington.
Richmond, Sylvester, Hornsey.
Rigg, John, Southport.
Ruddock, Edward Harris, Woolwich.
Searle, Francis Furlong, Exeter.
Staff, George Thomas Albert, Barnes.
Steell, Frederick, M.D. Univ. Edinburgh, Edinburgh.
Werry, Augustus, Smyrna.
Wynne, John Kendrick, Oswestry.

The following gentlemen were admitted on the 1st inst.:—

Aspray, Chas. Owen, M.D. St. Andrews, L.S.A., Newton-road, W.
Brown, Edward, Reading.
Carter, Richard, Newbury.
Day, William Henry, Wakefield.
Gervis, Frederick Heudebourck, Tiverton.
Hanna, James, New Zealand.
Henderson, Hector Grahame, London.
Jardine, Arthur David, Chatham.
Orr, Gawin, Belfast.
Phillips, George Richard Turner, Bayswater.
Roberts, Edwin, St. John's-wood.
Sharp, Geo. Wyatt, L.S.A., Great Cumberland-street, Hyde-park.
Thomas, Edward Stevenson, Birmingham.
Wilson, Hubert, South Shields, Greenwich.

LICENTIATES IN MIDWIFERY. — The following Members of the College, having undergone the necessary examinations, were admitted Licentiates in Midwifery at a meeting of the Board on the 5th inst.:—

Brown, Frederick Gordon, Finsbury-circus; diploma of Membership dated April 23, 1863.
Carson, Alex. Tertius, Coleraine; Nov. 12, 1861.
Davidson, Christopher Montgomerie Devenport, Wandsworth-road; Jan. 29, 1861.
Davies, Richard William, Cobbrook, Bucks; Nov. 18, 1862.
Henson, Sidney Rossell, Hull; April 22, 1863.
Kempthorne, Henry Law, King's Coll. Hosp.; May 20, 1863.
Langston, Thomas, Hulme, Manchester; May 20, 1863.
Noad, Geo. Wm., Wokingham, Berkshire; Aug. 1, 1862.
Smith, Rich. Wagstaff, Handsworth; Nov. 13, 1860.
Stone, Robert Sidney, Bath; Jan. 21, 1863.
Yarrow, Geo. Eugene, Central-street, E.C.; July 30, 1863.

LICENTIATES IN DENTISTRY. — The following gentlemen, having undergone the necessary examinations, received their diploma in Dental Surgery at a meeting of the Board on the 3rd inst.:—

Atkinson, John Hastings, Leeds.
Bell, James Bradford, Margaret-street, W.
Gill, Seth, Islington, Liverpool.
Harrison, Richard, Camden-street North.

Hawkins, Thomas, 35, Great Pulteney-street.
Holford, William Taylor, Half-moon-street.
Jones, Alfred Barron, Brook-street, W.
Moseley, Gilliam, Bath-buildings, Sheffield.
Murphy, James Edward Moseley, Derby.
Pillin, Louis Bargoyne, Notting-hill.
Richardson, James, Duke-street, W.
Rogers, Simon Alfred, Manchester.
Sutcliffe, James, Bradford.
Turner, James Smith, Margaret-street, W.
White, Thomas Charters, Upper Ecclestou-place.

NAVAL SURGEONS.—The following Members of the College passed their examinations for full Surgeons in the Royal Navy during the past week:—

Cann, Thomas, H.M.S. "Recruit," Chatham; diploma of Membership dated April 11, 1859.
Gross, Samuel, H.M.S. "Dauntless," Southampton; April 11, 1859.
Lawrenson, Richard Charles Pasley, Royal Naval Hospital, Plymouth; Dec. 12, 1856.
Richardson, Francis Hunt, H.M.S. "Majestic," Liverpool; April 13, 1857.

ST. BARTHOLOMEW'S HOSPITAL.—The following gentlemen have obtained Scholarships at the close of the Winter and Summer Examinations:—S. Hall, H. Mackintosh, F. W. Richards, L. Powell, F. Bateman, R. Robinson, T. Cuddiford.

DISCOVERY OF A MEDICAL PAPYRUS AT THEBES.—Mr. A. Leith Adams, of Malta, describes a medical papyrus discovered at Thebes, which is written in a demotic character, and contains a discourse on boils (ulcers?), fractures, and wounds on the head in general, with aphorisms, prognostics, and an oath or prayer to be used by the physician in attendance on the sick, the whole being somewhat after the style of the Hippocratic writings and the early Grecian school of medicine.

A TESTIMONIAL of an unusual character has been paid to the services of Dr. O'Sullevan, the surgeon of the Glennamaddy Dispensary. The inhabitants of the district, many of whom are humble and respectable farmers, during his temporary leave of absence, united in supplying him with turf, many horses and carts being employed in its delivery.

A UNION WITHOUT A DOCTOR.—The election of a medical officer of the Scariff Union, Ireland, has been going on for about two months. The candidates are Dr. Burke, of Killaloe, and Dr. Sampson. On each occasion of voting, the number of votes for the one have been exactly equalled by the votes for the other.

THE HOP PLANT IN INDIA.—The "Times of India," in reference to the many medical benefactors of the country, mentions amongst the foremost Dr. Cleghorn, who is now engaged in introducing the hop-plant into the Neilgherry Hills, the climate of which is said to be favourable to its cultivation.

A PLAGUE BURIAL GROUND.—An immense quantity of human remains have been removed from beneath the foundations of the houses in Broad-street Buildings, City, which have been taken down by the North London Railway Company. It is said that this spot was used as a burial-ground for those who died of the plague.

LUNATIC PRISONERS (IRELAND).—The forty-first Report of the Inspector General of Prisons (Ireland) states that all the abuses with regard to the treatment of lunatics detailed in former reports are still continued. Lunatic prisoners are still brought to gaols tied down with ropes on cars, and among the numbers committed from union workhouses very distressing cases sometimes occur.

THE LIBRARY OF THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY has made rapid progress of late years. It now numbers upwards 15,000 volumes, and is increasing at the rate of 600 or 700 annually. The library will be closed from Monday, August 17th, to Saturday, Sept. 12th, both days inclusive.

TESTIMONIAL.—On Wednesday, the 29th ultimo, a testimonial, consisting of an elegant tea service, was presented to John Jessup Sewell, Esq., surgeon, of Brighton, at the Star and Garter Hotel. Dr. Barker, on making the presentation, said that it was the spontaneous gift of the poor patients in Mr. Sewell's district.

BARON LIEBIG.—The King of Saxony has conferred on Baron Liebig the cross and insignia of a Commander of the Order of Albert, in recognition of the services he has rendered to agriculture.

COLONIAL APPOINTMENT.—Dr. David P. Thomson, of Wakenaam, Essequibo, has been appointed Justice of the Peace and *ex officio* Coroner for the Colony of British Guiana.

SMALL-POX ON BOARD A TRANSPORT SHIP.—The *Windsor Castle*, from London for Bombay, put back into Plymouth on Sunday last, small-pox having broken out on board.

PHARMACEUTICAL CONFERENCE.—It is proposed to hold a Pharmaceutical Conference during the sittings of the British Association for the Advancement of Science, about to be held at Newcastle. It is expected that the Conference will meet on the 1st or 2nd of September.

DEATH OF DR. P. REILLY.—We last week announced the death of this gentleman, which took place in France, on his way to Rome. He had recently left Hertford, had been in Belgium, and thence up the Rhine to Cologne; but, hearing of fevers higher up the river, he retraced his course to Paris, *en route* for Rome, having a great desire to visit the Holy City of the Catholics, and to see his Holiness the Pope. He was staying at the Hotel de Normandie, Rue St. Honoré. On the evening of the 24th ultimo, he felt a slight rheumatic attack and had a warm bath, during which he was seized with cramp; but about eleven o'clock at night he felt better, and dismissed his attendant. Next morning he did not appear at his usual time, and on the waiter going into his room he was found lying on the carpet on the floor, quite dead. It is supposed that he died from rupture of a bloodvessel of the heart. Dr. Reilly had passed a laborious and useful life in Hertford. He had obtained an extensive connexion, secured a lucrative practice, and was much esteemed by his patients. He was very kind to the poor, especially to the Irish of Hertford and neighbourhood—his fellow-countrymen. A testimonial was recently presented to him from above 150 of his patients, and we regret that he has not lived longer to enjoy the repose which after a life of arduous labour he had well earned.

COMMUNICATING INFECTIOUS DISEASE.—The following report is copied, verbatim, from the newspapers. It is to be regretted that so meagre an account has been given. In the absence of further particulars it is impossible to understand for what the damages were awarded. Important principles are involved in the matter, and it would be satisfactory if a more detailed account could be supplied:—"The judge of the Malton County Court has just given his decision in a curious trial, which was heard before him in May last. Mr. William Thompson, farmer and lodging-house keeper, at Hovingham, near Malton, sued Mr. John Postil, draper, of Burlington, for £60, for loss sustained by plaintiff by defendant's family bringing the scarlet fever into his house. Defendant, it seems, had taken the house, and removed his family there soon after they had had the fever, in consequence of which plaintiff's niece and wife both caught the disease. No one could be got to wait upon the invalids, and the plaintiff, therefore, had to stay at home and neglect his business; and there was a considerable expense incurred in cleansing, papering, and painting the house. The case was supported by the evidence Dr. Lascelles, of Slingsby, who stated the scarlet fever to be strictly a contagious disease, and that, considering the fact that the defendant removed his family to Hovingham only a fortnight after the medical gentleman had ceased attending them, he had no hesitation in saying the plaintiff's wife and niece had taken the infectious disease from the defendant's children. His honour reserved judgment till the present court, when he gave judgment for the plaintiff. Damages £10, with all costs."

THE LATE SIR BENJAMIN BRODIE, BART.—An admirable bust of this distinguished surgeon has just been placed in the council-room of the Royal College of Surgeons. It has been executed by Mr. Weekes, R.A., and although evidently posthumous is a most excellent likeness of the distinguished original, and a worthy companion of those other great men now adorning the hall of that institution, as Hunter, whose pupil he became, Sir Astley and Samuel Cooper, Pott, Bell, Travers, Cline, Dalrymple, Liston, &c. Mr. Weekes is making rapid progress with the statue of John Hunter, towards the expenses of which Mr. South, the honorary secretary, will shortly receive a second grant from our American friends, who, notwithstanding the unhappy state of that quarter of the world, still remember the old country, as their handsome subscription list to the Hunter Statue will shortly testify.

THE RECENT COLLEGIATE ELECTION.—Out of the 312 electors who recently recorded their votes for Fellows to seats in the Council of the College of Surgeons, no less than seventy-one were from the country. This is a sufficient answer to the organ of the Provincial Association in abusing its own members for the apathy displayed by them in all collegiate matters, especially elections. Some of the electors attended purposely

from Manchester, Liverpool, Exeter, Durham, &c. The number will be considerably increased next year, when Mr. Turner, of Manchester, will offer himself, but not, it is stated, in opposition to the re-election of Mr. Hancock, who, as is now pretty well known, will have to offer himself again for his seat. From the admirable manner in which Mr. Turner presided at the last festival of the Fellows, as well as from the liberal opinions expressed by him on that occasion, there is no doubt he made a considerable number of metropolitan friends, the value of whose friendship he will be able to appreciate in July next.

UNIVERSITY COLLEGE, LONDON.—On Saturday, the last Session of the Academical year 1862–63, the Council, in compliance with a recommendation, long since contemplated, of the Medical Committee of the Hospital, conferred on Mr. H. Thompson, in consideration of long and valuable service as assistant-surgeon, the title of surgeon to the hospital. The appointment of another assistant-surgeon was resolved on, and directions were given for taking the usual steps towards procuring candidates for the office by the beginning of the next session, in October.

HEALTH OF LONDON DURING THE WEEK ENDING SATURDAY, AUGUST 1ST.—A high rate of mortality prevailed in London last week. In the four weeks that ended 25th of July, they were successively 1187, 1287, 1364, 1452. In the week that ended last Saturday they rose to 1514. Scarlatina appears to be increasing. It was fatal in 87 and 110 cases in the two previous weeks; and last week in 122. The deaths from diarrhœa and cholera were 217, and were not quite so numerous as in the previous week. In the corresponding week of 1857 they were 288; in that of 1859 they were 336. Of the 217 cases of last week 189 occurred to young persons, an immense majority of whom were infants. Of 16 deaths referred to cholera, 7 were those of adults.

Births last week—Boys, 1007; girls, 934. Total, 1941.

Obituary.

STAFF ASSISTANT-SURGEON W. A. HOPE, M.B.

THE following account of the barbarous murder of this officer has been received from New Zealand:—

On the 4th of May last, Dr. Hope was ordered to proceed in medical charge of a party of the 57th Regiment from Tataraimaka to the town of New Plymouth. The party consisted of Lieut. Tragett, two sergeants, and six privates of the 57th Regiment. On their way, near the Oakura river, they were suddenly fired upon from the bush without a moment's notice. The fire came from about twenty yards' distance. Dr. Hope, who was on horseback, fell wounded, and at the same time the two sergeants dropped. The remainder of the party immediately extended, and returned fire; but had no sooner done so than they were surrounded by about thirty Maori natives. One of the privates managed to escape, though badly wounded, by hiding in the bush. The attack was witnessed by some men of the Commissariat Transport Corps, who were going towards Tataraimaka. These men hastened back to town, and gave the alarm. Some troops were immediately sent out, when the bodies of Dr. Hope and Lieut. Tragett, together with those of the soldiers, except the private before alluded to, were found lying in the road. They had all received mortal gunshot wounds, and had been subsequently tomahawked and speared. Dr. Hope had a gunshot wound through the right shoulder; and, on further examination, both lungs were found to have been penetrated. The ball lodged beneath the skin, near the spine, on the left side. He had also a tomahawk cut over the left side of the head, and a deep spear wound through the face and upper jaw. Dr. Hope's horse was found with its leg broken by a musket ball.

Dr. Hope was formerly himself in the 57th Regiment, and had only lately been appointed to the staff. He entered the army in May, 1858, and was an officer of high character in his department. He was the fourth son of the late R. Hope, Esq., J.P. of Urelands, in the county of Wicklow.

MEDICAL VACANCIES.

Asylum for Female Orphans, Lambeth—Physician, vice Sir C. Locock, resigned.
Dundee Royal Infirmary—Medical Officer and General Superintendent, vice Dr. Glen, deceased.
Preston Dispensary—Junior House-Surgeon.
University College Hospital—Assistant-Surgeon.
West Norfolk and Lynn Hospital—House-Surgeon.

Medical Diary of the Week.

MONDAY, Aug. 10	ST. MARK'S HOSPITAL FOR FISTULA AND OTHER DISEASES OF THE RECTUM.—Operations, 1½ P.M. METROPOLITAN FREE HOSPITAL. — Operations, 2 P.M.
TUESDAY, Aug. 11	GUY'S HOSPITAL.—Operations, 1½ P.M. WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEDNESDAY, Aug. 12	MIDDLESEX HOSPITAL.—Operations, 1 P.M. ST. MARY'S HOSPITAL.—Operations, 1 P.M. UNIVERSITY COLLEGE HOSPITAL. — Operations, 2 P.M. LONDON HOSPITAL.—Operations, 2 P.M.
THURSDAY, Aug. 13	ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. CENTRAL LONDON OPHTHALMIC HOSPITAL — Operations, 1 P.M. GREAT NORTHERN HOSPITAL, KING'S CROSS.—Operations, 2 P.M. LONDON SURGICAL HOME.—Operations, 2 P.M. WEST LONDON HOSPITAL.—Operations, 2 P.M. ROYAL ORTHOPÆDIC HOSPITAL. — Operations, 2 P.M.
FRIDAY, Aug. 14	WESTMINSTER OPHTHALMIC HOSPITAL. — Operations, 1½ P.M.
SATURDAY, Aug. 15	ST. THOMAS'S HOSPITAL.—Operations, 1 P.M. LOCK HOSPITAL, Dean-street, Soho.—Clinical Demonstrations and Operations, 1 P.M. ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M. KING'S COLLEGE HOSPITAL.—Operations, 1½ P.M. ROYAL FREE HOSPITAL.—Operations, 1½ P.M. CHARING-CROSS HOSPITAL.—Operations, 2 P.M.

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Advertisements which are intended to appear in THE LANCET of any particular week, should be delivered at the Office not later than on Wednesday in that week: those from the country must be accompanied by a remittance.

To Correspondents.

Mr. Thomas S. Blackwell (Spitalfields) very properly declined to give an opinion as to the cause of death of Bridget Garvey, an inquest on whose body was held on the 24th ultimo by Mr. Walthew, the Deputy Coroner. In the absence of a post-mortem examination, any verdict arrived at by the jury could be at best of doubtful value. From the depositions forwarded to us, it would certainly be mere guess-work to say that the infant died from suffocation. Can it be possible that the Registrar has stated the "cause of death, as copied from the Coroner's paper" sent to him, to be "violent suffocation in bed"? Is this the only public record of the event? If so, it should be rectified, and the real verdict found by the jury should be substituted: "Found dead in a certain bed suffocated, but how caused there is no evidence to prove." But was there really any evidence to prove that death was caused by suffocation? In the absence of medical testimony, the inquiry, to say the least of it, was most imperfect and unsatisfactory. Unnecessary post-mortem examinations are to be deprecated. There are, however, certain cases in which without them the verdict of a jury can be but conjectural. The case of Bridget Garvey seems to be one in point.

E. E.—We are not acquainted with any institution which would meet the case of our correspondent. He can, however, we doubt not, obtain some pecuniary aid from the Corporation of the Sons of the Clergy, No. 2, Bloomsbury-place.

E. T. W.—Dr. F. Churchill; Dr. R. Lee; Dr. Tyler Smith.

PROPOSED INQUIRY INTO AND TREATMENT OF DEAF MUTISM.

To the Editor of THE LANCET.

SIR,—The absence of medical assistance to the deaf and dumb in infancy, and the present idea of intermarriage and deficiency of the organs causing deaf mutism, being so entirely conjectural and completely devoid of scientific interest, suggest the following brief plans for a knowledge of the cause and treatment:—

1. Registration of infants at birth or month old in all parishes, whether deaf or not.

2. If deafness is found at this period, no remedy is suggested; but if deafness comes on afterwards, its detection is easy, and it probably arises from teething, scarlet fever, or whooping-cough—diseases that are closely connected with the relative parts of the organs of hearing and speech.

3. At two or three years of age, the local treatment should consist of inflating detergent powders into the throat, or applying lotions on the diseased parts, and applying external revulsive means, together with appropriate general treatment and generous diet, united to equable atmosphere.

The desirableness of the above views being made known to the general medical practitioner can scarcely be disputed, whilst the aurist only treats of deafness in children and adults.

I remain, Sir, yours truly,
Bath, August, 1863. W. PARKER, M.R.C.S.

A Student, (St. Bartholomew's.)—Mr. Skey will not be compelled by the law lately passed by the treasurer and governors of the hospital to resign his appointment as Lecturer on Anatomy to the school. We are fully aware of the opinions generally entertained by the *alumni* of the hospital with regard to Mr. Skey's retirement from the office of surgeon. In his particular case the law inflicts an injustice; but individual hardship must not be taken into consideration when the public good is involved. It might have been well for St. Bartholomew's if the law in question had been in operation a quarter of a century ago.

Mr. Chas. Williams.—The table of cases of "Stone in the Bladder operated on at the Norfolk and Norwich Hospital" shall appear in our next number.

FELLOWSHIP OF THE COLLEGE OF PHYSICIANS.

To the Editor of THE LANCET.

SIR,—At a time when the College of Surgeons is agitated by revolutionary measures and internal commotion, let me call attention to the late election of Fellows at the sister College. Nine gentlemen have there been elected to the honours of Fellowship from among a hundred or so eligible Members; and although the first glance at the names of the newly elected leaves it uncertain upon what principle the nomination by the Council and the election by the Fellows have been made, a closer inspection explains everything, and reveals a system that deserves our serious consideration.

In a society overflowing, as everybody knows, with men of talent and literary attainments, the oath only to elect to the Fellowship men "distinguished by character and learning" can but in a most trifling degree direct the choice. To help the electors to a decision, some further test must be applied; and as a competitive examination would be out of place in an institution where dignity is only to be attained with years, what can be better than an arrangement by which this solemn act, about which oaths are taken and Latin notices issued, is converted into a compliment to the Council? Good feeling is thus promoted, confidence in the Censors and others of the Council is expressed, and the world has an opportunity of beholding no less a phenomenon than a united medical body. With feelings like these stirring the Collegiate breast, what more natural than that, as about half of the Council are Cambridge men, three of the new Fellows should be also Cambridge men? and as many of the Cambridge Councillors have been educated at St. Bartholomew's, what could be more reasonable than that the three Cambridge gentlemen elected should also be of St. Bartholomew's? What, again, could exhibit nicer feeling on the part of the College, or better mark the services of a Censor, than the election of one of his numerous relatives? But to recognise the services of only one Censor would be paltry and inconsistent with Collegiate practice. The Fellows, therefore, advanced another step; and as they had a Censor who was distinguished for his connexion with the insane, so two gentlemen in the same line of practice have been made his more intimate associates. If, however, one who ministers to a brain diseased was thus honoured, the claims of the several Councillors connected with hospitals for the chest could not be overlooked, and thus colleagues of these gentlemen have received two of the three remaining appointments.

Who can deny that, in thus adding to their number, the Fellows have acted in a kindly, generous spirit? Comparisons are proverbially odious; and with upwards of a hundred candidates before them, any attempt to discuss each man's merits, to weigh intellect against intellect, could only lead to bitterness, and was manifestly unnecessary when the position of the candidates is considered. Some may be unknown to fame, but they are enrolled among the members of the College; some may not have been admitted by examination, but in that they showed their wisdom, for they avoided an examination, and paid a diminished fee; and if with some their life has been a constant struggle, if they have clung to straws and rested upon reeds, is it not to the meek, the hungry, the poor, that medical men are ever ready to minister?

Worthy to be the representatives of a noble profession, the Fellows of the College of Physicians, careless of the criticisms of the envious, or the sneers of the ignorant, and undaunted by popular clamour against jobbery, hypocrisy, and false swearing, calmly proceed in the election of their Fellows upon a course which, at once vicious and contemptible, has rendered their College the laughing-stock of Europe.

I am, Sir, your obedient servant,

July, 1863. PARIS.

A Juryman, (Marylebone.)—Mr. Cathrow is a gentleman of the highest position and respectability. His conduct in the lamentable affair which led to late inquest is not open to censure, but, on the contrary, entitled to commendation. He acted in every way becoming a surgeon placed in a very delicate position.

APOLLYON *v.* SALVATOR.

To the Editor of THE LANCET.

SIR,—I shall be glad if you will afford me space for a brief narrative in confirmation of a remark of your correspondent, "Electus."

In the course of my travels I once had the good fortune to be mainly instrumental, at the imminent risk of my life, in a raging sea, in saving a French ship-of-war from shipwreck. Of this no notice was taken; so after waiting about a couple of years, and knowing how broadcast the Cross of the Legion of Honour is thrown, I ventured to solicit that distinction, and, being in Paris, addressed a memorial to the Emperor himself. I suppose this was informal, as it elicited no response. I then applied to the French Embassy in London, and was informed it was no business of theirs. Finally I sought the aid of Lord Cowley, the English Ambassador in Paris, and he replied that his interference could be of no avail; for that if I succeeded in accomplishing my aim, I should not be allowed to wear the decoration, as the permission to do so was accorded by the Queen only to those who won it in the face of the enemy.

Now, this appears to me to be a somewhat strange doctrine. In the first place, it is a curious question to know if a furious sea is not somewhat of an enemy to man, leave alone that my voluntary exposure to it required probably more coolness than is to be found on a field of battle, where the excitement inspires even the pusillanimous. Had I, instead of being the means of saving that ship, been, under other circumstances, the agent of blowing it up, I might have received some reward; though perhaps not, as I am not a professional slaughterer.

Finally, I should like to know if Lord Cowley or any other who has acted as Ambassador wears any foreign orders; and if so, whether they consider they have a right to do so from "having faced the enemy"?

I am, Sir, yours faithfully,

Kensington, August, 1863. JOHN CHIPPENDALE, F.R.C.S.

Hypicus.—Notwithstanding all that has been said, the increase in the use of tobacco continues. The quantity imported during the first five months of 1862 was 6,355,215 lbs. of unmanufactured, and 5,144,999 lbs. of manufactured tobacco; the quantity in 1863 was 10,807,400 lbs. of unmanufactured, and 4,845,575 lbs. of manufactured tobacco: making altogether an increase of 4,852,761 lbs. for the first five months of the present year.

A CAUTION.

To the Editor of THE LANCET.

SIR,—From circumstances that have come under my observation within the last few days, there appears to be some probability of an attempt being made to imitate the case of Bromwich *v.* Waters as against some medical man in London. Having been unable to learn the name of either party in the transaction, a trial might take place without my knowledge. I therefore mention the circumstance to you, who are more likely to hear of such trial or case, if the matter goes so far, in order that my testimony may be available should the parties be the same.

Late on the evening of the 29th of July, a pretty young woman came to my house, with "her sister," (no doubt as a witness,) and requested that she might be carefully examined, as she feared she had been ruined that morning by a medical man under pretence of the performance of some necessary operation.

As the result of my investigations, I told her that her ruin had assuredly not been effected that morning (it had been done long ago). She then artfully cross-questioned me as to whether indecent liberties might not have been taken with her, and yet no trace be left; and finally, whether some instrument might not have been unwarrantably used.

Immediately on her leaving I took notes of what had passed, with a description of her appearance. Should she succeed in finding a medical man who would give support to her ideas, I feel assured she will try to be mischievous.

I enclose my card, and am, Sir, yours obediently,

August, 1863. M.D. LOND.

*** The above communication is from a highly respectable member of our profession. That the "caution" is not unnecessary, recent events sufficiently testify. The letter of our correspondent is suggestive of an important moral. Medical practitioners cannot be too careful in listening to statements calculated to inflict injury upon a professional brother. Most of the unseemly trials which have recently taken place would assuredly never have occurred if proper caution had been exercised on the part of those physicians and surgeons who appeared in an unworthy position as witnesses against their professional brethren on *ex-parte* and interested statements. If members of the profession were true to themselves, it is simply impossible that such disgraceful cases as those of Russell *v.* Adams and Bromwich *v.* Waters could ever have transpired to shock and disgust the public and the profession. "M.D. Lond." has acted with great judgment and with the true *esprit de corps*. We commend the example which he has set to the serious attention of those who may be placed in a similar position.—ED. L.

Anti-Suicide, (Kilsyth, N.B.)—Such a mode of proceeding is opposed not only to custom, but to common decency. It is quite contrary to rule for the ordinary medical attendant to pay out of his own pocket the charges of those called in to assist at consultations or at surgical operations. The claim should be resisted at all hazards. If the pursuer insist on bringing the case before a court of law, we shall be glad to have a report of the proceedings.

THE SEALING OF ULCERS.

To the Editor of THE LANCET.

SIR,—I presume your correspondent of last week (H. B. Franklyn, Esq., 10th Regiment) is aware that large chronic ulcers have long been treated in the manner he suggests, and that his evidence is therefore corroborative, not original. I believe that chronic ulcers on the legs have for years been treated by naval surgeons on the plan he alludes to, but does not appear to carry out in its simplicity—viz., that of "hermetically sealing them." Mr. Franklyn appears to combine four distinct and very rational plans of treatment: cleanliness, exclusion of the air, gentle stimulation, and mechanical support. To these he probably adds "rest" of the affected limb. The sticking-plaster affords, I presume, support; the caustic, stimulation; the collodion and oil-silk, exclusion; and the soap and water, cleanliness.

Now, Sir, at H.M. Invalid Depôt for Convicts at Dartmoor, the late W. H. B. Jones, M.D., used to treat chronic ulcers by hermetically sealing them with warm, semi-fluid white wax, over which he placed a piece of dry lint, and then bandaged the whole affected limb. He was a retired naval surgeon, and he informed me that the plan had been long employed in the navy.

I found that in cases where the edges of the ulcer were raised and very callous, a multitude of small, deep incisions right into the healthy tissues greatly assisted the sealing; and in the event of this plan failing, that the complete destruction of the callous edges by potassa fusa, and then the sealing and bandaging, generally proved successful. General health, &c., of course, attended to.

Yours truly,

August, 1863. WM. J. WILSON.

Student.—According to a recent writer of authority, the older names of cholepyrrhine, biliphæine, and bilifulvine may be considered as synonymous with cholophæine. Biliverdine and cholechlorine are synonyms of cholochlorine.

TREATMENT OF DIPHTHERIA WITH ICE.

To the Editor of THE LANCET.

SIR,—Allow me to inquire, through your columns, what has been the experience of your correspondents in the treatment of diphtheria with ice? Seeing it favourably spoken of in *The Times*, on the authority of Dr. Le Grand, of Boulogne, I think it would be important to elicit the experience of medical men as to the value of such simple treatment.

Yours obediently,

Billiter-square, August, 1863. S. W. D.

*** It is simply absurd to regard ice as a *remedy* for diphtheria. It may be useful in allaying some of the more urgent symptoms.—ED. L.

Mr. J. L. Jellicoe, (Taunton.)—The tutu berry, or fruit of the toot plant, to which we referred in a former number as a poisonous plant of New Zealand, is said to be rarely fatal to man or animals accustomed to its use. The toot poison belongs to the class of narcotico-irritants. The seed, which is most fatal to man, is contained in a beautiful dark-purple, luscious berry, resembling our blackberry, clustering in rich pendant bunches. Emetics and stimulants are usually employed as remedies.

IF *Subscriber* (Rothes, Elginshire) will send his name and address, he shall receive a private note.

Mr. Boys communicates the interesting fact that hydatids of the liver is a frequent disease in the colony of Victoria, and that instances of recovery after tapping are by no means uncommon.

THE MEDICAL OFFICERS OF THE ARMY AND THE LATE MEDICAL WARRANT.

To the Editor of THE LANCET.

SIR,—Serving my country in a distant land, and smarting under the uncourteous treatment which medical officers invariably receive at the hands of the military authorities when the slightest pretext offers,—as well as the supreme indifference with which their just complaints have been treated, notwithstanding the force of public opinion and the powerful arguments of the press on their behalf,—I have been looking forward anxiously to the restoration of the Royal Warrant of 1858, in all its entirety, as the only security for our rights and privileges. At length I have caught a glimpse of the new Warrant in the columns of the *Army and Navy Gazette*; but as the bait seems to have taken with the editor of that journal, notwithstanding his powerful advocacy of our claims on other points besides the mere restoration of rank,—which, by the way, had been better left alone than as at present conferred,—I am constrained to request you to publish this letter, although from circumstances it may appear late in the field.

The thanks of the medical officers of the service are due to you for the manner in which you have advocated their claims; and I would particularly refer to your number of the 10th January, 1863, wherein you eloquently pointed out the grievances of medical officers in their most important bearings, and you took occasion therein to pay just tribute to the able way in which the *Army and Navy Gazette* has taken up our cause. In calling the reader's attention to an article in that journal, you truly say the facts therein stated are indisputable and undisputed.

In the Royal Warrant of 1858, it was declared to be the Queen's royal will and pleasure that the relative rank accorded to medical officers in their various grades shall carry with it all precedence and advantage attaching to the rank with which it corresponds, with a single exception, expressly provided for—namely, the presidency of courts-martial, where it was provided that the senior combatant officer should always be president.

Now, one would think that after such a declaration (especially bearing in mind the way in which the so-called restoration of rank has been forced upon the authorities) the rights, privileges, and precedence would never again be infringed. But to show the folly of all such calculations, you have only to turn to the latest boon held out to medical officers in the shape of the late Warrant, where the rank assigned to them in their various grades is made to carry with it no precedence whatever; and henceforth a service which was beginning to be looked upon favourably, as tending to a useful, honourable, and, it might be, distinguished career,—to quote your words,—can now only present attractions to those who are content "to live by bread alone." Or as our witty and sarcastic friend, *Punch*, has it in the Horse Guards' advertisement for medical officers, which appeared in his number of April 4th:—'None but medical snobs need now be aspirants for commissions, as such only are wanted, and they must be prepared to be snubbed by their juniors in sense, status, and years."

Then, again, I need not tell you that the Warrant of 1858, up to this day, is not recognised in India—that most favourable climate,—and medical officers are there still most unjustly deprived of the pay and allowances attaching to their rank. This is a nice state of things, especially when it is considered that with the officers of the Indian army, more than half the officers of the army are serving in that country. Has the new Warrant remedied this? Oh, no! When there is the slightest pretext for nullifying the privileges and advantages of medical officers, it is seized on with avidity; but it is clear nothing else but continued snubbing and deprivation of the honour and respect which are the medical officer's due, need be expected from Horse Guards' officials as long as they are allowed to interfere, and that the only remedy lies in public opinion and the voice of Parliament, representing the country, which must be again felt if, in the event of a great war, our military reputation is not to be again tarnished as in the Crimean campaign.

With thanks for your untiring advocacy on our behalf,

I am, Sir, your obedient servant,

X.

T. T.—The adoption of the metric system has been decidedly and unanimously recommended by a Committee of the House of Commons, after most careful inquiry and full discussion. Whether, however, Parliament will render its use *compulsory*, is another question.

A Constant Reader, (Sheerness.)—The *Homeward Mail*, at Allen's, Leadenhall-street.

R. P. J. should consult some respectable brother practitioner. It is impossible to form an opinion of the case from the statement furnished.

THE MEDICAL PROFESSION AND LIFE ASSURANCE OFFICES.

To the Editor of THE LANCET.

SIR,—I regret to find that Drs. Ranking and Goodwin, two of the directors of the Norwich Union Life Assurance Association, are unable to influence the Court of Directors in the right direction. (See the letters in THE LANCET of July 11th and 18th.)

Another instance I give, because I consider it the duty of every medical man to point out the non-paying offices to his brethren.

On the 19th of June last, my son, Mr. J. Poole Lansdown, received from the Office of the Norwich Union in London the usual queries respecting a patient of his. No mention of a fee being made, he returned the paper the same day, reminding them of the requirement of a fee. As a matter of course, the paper has not been returned to him.

The reason why I have noticed this instead of my son is, that it is the same Office respecting which I have previously written.

I am, Sir, yours very respectfully,

Portland-square, Bristol, Aug. 1863. J. G. LANSDOWN, M.R.C.S.

Alumnus.—Of W. and R. Chambers, Paternoster-row; or it can be obtained by order of any bookseller, price 1s.

Adams Defence Fund.—We have received 21s. towards this Fund from "A Grateful Patient."

MEDICAL PHILANTHROPY.

To the Editor of THE LANCET.

SIR,—Within the past week, on perusing a leading daily journal, my attention was drawn to, and my admiration excited by, an essay on Toxicology, embodied in a letter from a Caledonian M.D. This benevolent individual, overflowing with the milk of human kindness, proceeded to inform the British public (gratis!) how to treat itself when poisoned, milk being the universal panacea which would produce so many perfect cures. Moreover, he appended his address, doubtless as a hint that he would be delighted to afford additional information (without remuneration of course?)

Feeling that such a commendable act of charity to suffering humanity ought not to be hid under a bushel, I venture to constitute myself trumpeter for the occasion.

I am, Sir, your obedient servant,

August, 1863. SCALPEL.

*** The most objectionable practice which has lately prevailed of medical gentlemen communicating to the newspapers "cures and remedies" is greatly to be deprecated. The motive of these writers is but too transparent. If their communications had simply the effect of puffing themselves, they might be treated with contempt; but inasmuch as these effusions are often calculated to do serious mischief, it is high time that they were checked. Men entitled by their position to speak in the name of the profession with respect to "cures and antidotes," are not those who figure in the columns of a newspaper. Writers of this description, whatever may be their titles or whatever their merits, seldom, if ever, succeed in convincing their medical brethren of the force or value of their lucubrations.—ED. L.

Mr. Trustram's second letter arrived too late for insertion in this week's LANCET.

L.S.A.L.—He can do so legally.

Paterfamilias.—By getting it properly analysed, and summoning the offender before a magistrate.

THE DAY TESTIMONIAL.

To the Editor of THE LANCET.

SIR,—As Treasurer of the "Day Testimonial Fund," I am glad of the opportunity afforded by the letter signed by "A Subscriber" in your last number, to state that the business of the Testimonial Committee will soon be completed, and that the delay that has occurred has been due to the time required for communicating with every medical graduate of the University of St. Andrews, and for collecting subscriptions.

The testimonial, which is to consist (in accordance with the wish of Dr. Day) of a copy of Cuvier's Animal Kingdom, in twenty volumes, mounted in a cabinet of carved oak, will be ready for presentation as soon as the cabinet (which is being designed by the eminent wood-carver, Mr. Rogers, of Soho-square) shall be completed. A letter will be addressed to all subscribers previously to the presentation.

I am, Sir, yours, &c.,

Hinde-street, August, 1863. B. W. RICHARDSON, M.D.

A QUEER ASSOCIATION.

THE following advertisement is extracted from a daily paper:—

"FOR PORT PHILLIP RAILWAY PIER.—The splendid new Aberdeen-built clipper ship *Martha Birnie*, 1600 tons, A 1 at Lloyd's, Hugh M'Queen, commander, will sail from the docks punctually on 1st August. The *Martha Birnie* has just been launched by Wm. Duthie, jun., whose vessels have earned a reputation for great speed in various trades; she has a full poop with spacious accommodation for passengers, and will *carry a surgeon and cow if required*. For freight or passage apply to Geo. Thompson, jun., and Co., 24, Leadenhall-street, E.C."—*The Times*, 31st July, 1863.

COMMUNICATIONS, LETTERS, &c., have been received from—Sir Ronald Martin; Mr. Solly; Dr. Richardson; Mr. Hensworth; Mr. Meux; Mr. Babcock; Mr. Watts; Mr. Alexander; Mr. Forrester; Dr. Brittain, Chester; Mr. T. Stevenson, Bradford; Dr. Metcalfe, Leyburn; Dr. Thorowgood; Mr. G. S. Morris, Guisbro'; Dr. Charteris, (with enclosure;) Dr. Waterworth, Newport; Dr. Gill; Mr. Greenway, Gamlingay, (with enclosure;) Dr. T. Morris, Measham; Dr. Whitmarsh, Hounslow; Mr. B. Christian, (with enclosure;) Mr. E. S. Thomas; Mr. Blease, Altrincham; Mr. Ambrose, (with enclosure;) Mr. Walker, Wakefield; Mr. Glover; Dr. Beverley; Mr. Wilson, (with enclosure;) Mr. C. Trustram, Tunbridge; Dr. Abbotts Smith; Mr. Blackwell; Dr. Crisp; Mr. Goodlif; Mr. Barrett, Lynn; Mr. J. Johnstone, Stonewell, (with enclosure;) Mr. Gascoyen; Mr. Wordsworth; Mr. Gain, Durham, (with enclosure;) Mr. Hendry, Hull; Mr. Burton, (with enclosure;) Mr. Moore, Sheffield, (with enclosure;) Mr. Jasson; Mr. Parker, Bath; Rev. R. Wodrow Thomson; Mr. Bailey, Manchester, (with enclosure;) Mr. Winchester, Knowl Hill; Mr. W. Stephenson, Ackworth, (with enclosure;) Mr. Williams, Wirksworth; Dr. Munroe, Hull; Mr. Waller, Flegg Burgh; Mr. Harding, Stourbridge, (with enclosure;) Mr. Gregory, (with enclosure;) Dr. Ellis, Newcastle, (with enclosure;) Mr. Muriel, Hadleigh; Dr. West, Alford; Mr. Chippendale; Dr. Cameron; Dr. Ash; Mr. Mackintosh, Downham; Mr. Callender; Mr. Bothwell, Strabane, (with enclosure;) Mr. Wheelhouse, Leeds; Mr. Bradbury, Salford, (with enclosure;) Mr. Judge, Moreton; Mr. J. Potter, (with enclosure;) Mr. Curtis, (with enclosure;) Mr. Cargeeveen; Mr. Beddrop; Mr. Hobbes, (with enclosure;) Mr. Philpot; Dr. Croft; Mr. C. Williams; Mr. Houghton, Bootle, (with enclosure;) Mr. Sydney Jones; L.S.A.L.; S. W. D.; Scalpel; R. E.; Alumnus; X. Z., (with enclosure;) Paterfamilias; A Graduate in Medicine; M.D.; E. P. J.; Constant Reader; M.D. Lond.; J. C.; A Brother Assistant; A. B. C., (with enclosure;) Anti-Suicide; Wallasey Dispensary, (with enclosure;) A Juryman; A Student; &c. &c.